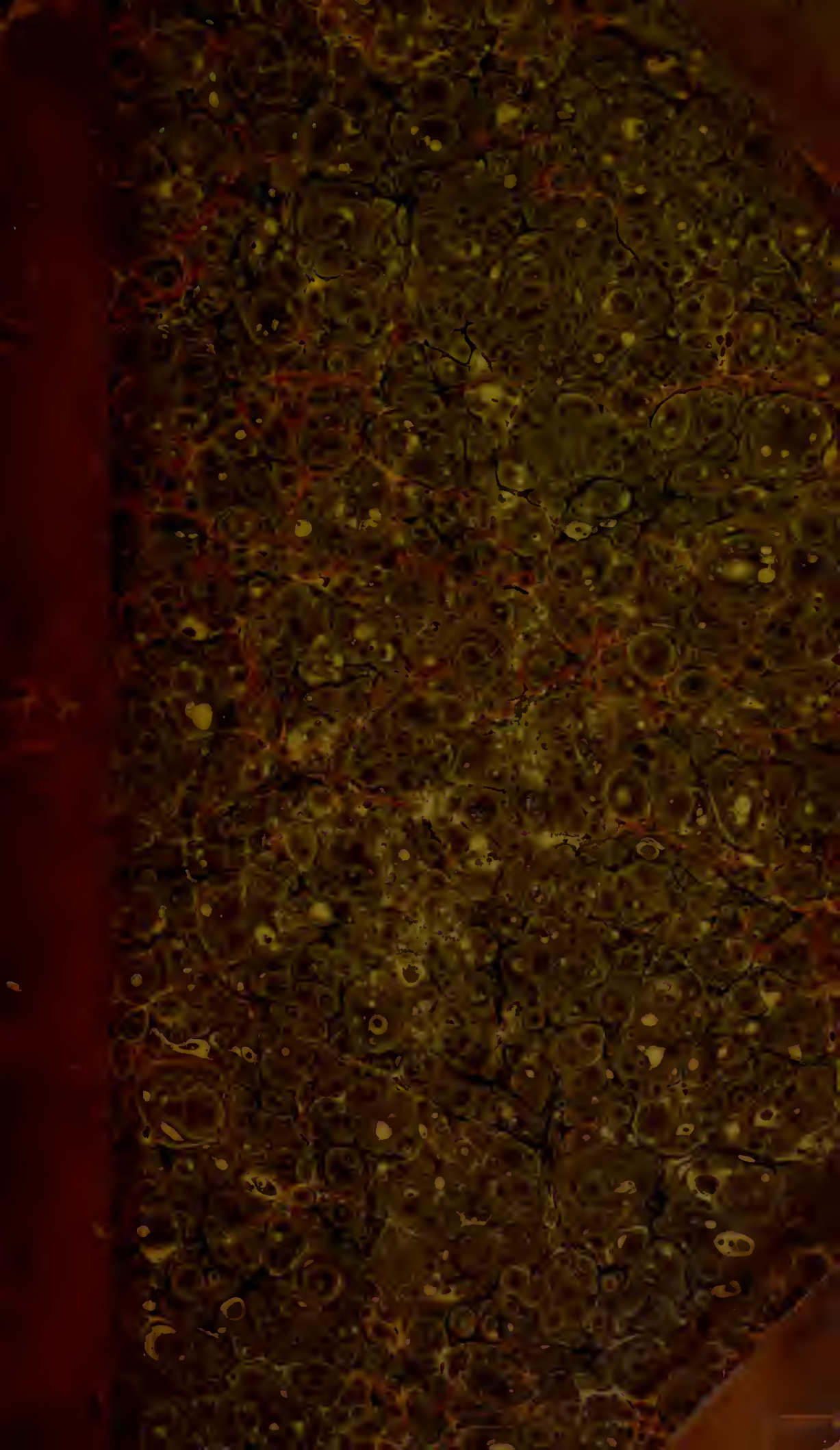


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A

PRACTICAL ACCOUNT

OF THE

MEDITERRANEAN FEVER,

AS IT APPEARED IN THE

SHIPS AND HOSPITALS OF HIS MAJESTY'S FLEET

ON THAT STATION;

WITH

Cases and Dissections.

To which are added,

FACTS AND OBSERVATIONS,

ILLUSTRATIVE OF ITS

CAUSES, SYMPTOMS, AND TREATMENT;

COMPREHENDING

THE HISTORY OF FEVER IN THE FLEET,

During the Years 1810, 1811, 1812, 1813:

AND OF THE

GIBRALTAR & CARTHAGENA FEVERS.

By WILLIAM BURNETT, M. D.

Physician of the Fleet; Honorary Fellow of the Imperial Medico-Chirurgical Academy of St. Petersburg; Resident Physician in Chichester, and one of the Physicians to the Public Dispensary in that City; late Physician and Inspector of Hospitals to his Majesty's Fleet in the Mediterranean.

Opinionum commenta delet dies, naturæ judicia confirmat.—Cicero.

London:

PRINTED FOR J. CALLOW, MEDICAL BOOKSELLER,

No. 10, *Crown Court, Princes Street, Soho.*

1816.

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TO

THE RIGHT HONORABLE

ROBERT LORD VISCOUNT MELVILLE,

FIRST LORD OF THE ADMIRALTY,

ONE OF

HIS MAJESTY'S MOST HONORABLE PRIVY COUNCIL;

&c. &c. &c.

AS A SMALL, BUT SINCERE TESTIMONY

OF

GRATITUDE AND RESPECT,

THIS VOLUME IS INSCRIBED,

BY, MY LORD,

YOUR LORDSHIP'S MOST OBEDIENT,

AND FAITHFUL HUMBLE SERVANT,

WILLIAM BURNETT.

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PREFACE

TO THE

FIRST EDITION.

THE occurrence of Fever in the Mediterranean Fleet, has of late years been so frequent, and in many instances so serious, both in it's immediate and remote effects, and so great a difference of opinion has prevailed respecting it's nature, and consequently as to the means to be employed for the cure, that it is presumed the following account of the disease, by one who has had (during a period of upwards of ten years' service on that station) ample opportunity of treating it in it's various stages, will not be useless to the public, or unacceptable to the members of the profession.

The Fever which has prevailed in the Mediterranean Fleet, more particularly towards the end of summer, or during the autumnal months, bears in every respect so striking a resemblance to the epidemics which have visited so awfully the Garrison of Gibraltar, and Spanish Cities on the coast of the Mediterranean, that the subject has acquired a peculiar interest, and demands our attention; more especially at a time when our intercourse with them is so great, and so likely to be extended.

The object of the first part of this volume, is to give *a concise, faithful, and practical account of the disease, as it appeared in the ships and hospitals of the Mediterranean Fleet;* together with such observations respecting it's treatment, as the author, from a very extensive personal experience, and an attentive observation of the practice of others, can recommend with the utmost confidence.

In order to elucidate the subject, a selection has been made of cases, treated in the Naval

Hospital at Mahon, under the author's directions, and several others added, with which some of the Surgeons of the fleet have obligingly favoured him.

Those cases which terminated fatally at the hospital, are accompanied by *a faithful report of the morbid appearances found on dissection,* which it is considered will form no unimportant addition to a work of this nature.

It was not originally the intention of the author to have published the second part of this volume, but he believes it unnecessary to apologize for laying before the public so valuable a collection of evidence, relative to the causes, symptoms, and treatment of fever in the Mediterranean.

The author has also in this part of the work, endeavoured to remove the obscurity in which the fevers of Gibraltar and Carthagena have hitherto been enveloped. The attempt to accomplish this desirable object, has been attended

with many difficulties, some of them of an insurmountable nature; and though he has not therefore been enabled to throw all the light he could have wished on this important subject, yet he feels assured that this, the only history of these diseases which has appeared, will not be read without interest, by the members of the profession; particularly the clear, and (he hopes) satisfactory manner, in which the fever in the 67th Regiment at Carthagena, is traced to the influence *of marsh miasma;* the powerful *negative* evidence which he has brought forward of it's non-contagious nature at both places, and consequently the *very great improbability of it's being an imported disease.*

The Medical Officers of Gibraltar, having constantly declared the fever of Carthagena to be perfectly similar to that which has committed such devastation amongst themselves, the pressing necessity will be seen of resorting to measures very different from the establishment of a *quarantine,* to prevent this fever from again committing such ravages in that Garrison.

To those who are unacquainted *with the urgent nature of this disease in it's more violent form,* it may appear that the author has recommended too liberal evacuations; to this he has to reply, that a success, which has never been exceeded in the treatment of any epidemic, (not only in his own practice, but in that of every surgeon in the fleet who has given them a fair and unbiassed trial,) fully warrants him in so doing. So far has *early* and liberal blood-letting been from inducing extraordinary debility, or a protracted convalescence, that the *speedy restoration to perfect health,* has surprised not only the patient, but his medical attendent. If the testimony of the respectable gentlemen whose names appear in this volume, be not sufficient, he can appeal to the Admirals of the fleet under whom he has had the honour of serving, and to the Captains of the ships in which this fever has appeared, for the truth of his assertions.

From the beginning of the year 1810, till October 1813, during which time the author was at the head of the Medical department

of the Navy in the Mediterranean, (which he was obliged to relinquish on account of ill health) no disease, excepting fever, has been epidemic in the fleet. Pneumonic attacks, from the very variable state of the weather, have been frequent; but, on this head, he has nothing new to offer: it is a disease, in it's more acute form, not likely to be mistaken, and the principles on which the treatment of it should be conducted, are already well known; but he wishes *to caution* the practitioner against *the insidious form of the milder attack of this disease,* which is but too often considered of little moment—*as a catarrh* —and the cure intrusted to small doses of antimony and a great coat; often to nature: with pain has he witnessed the effects of this treatment in the *melancholy increase of consumptive cases,* which the summer's heat has brought before him. *A patient can never be safe under the treatment of antimony alone, while cough, and local affection of the chest or side remain.* This, it may be said, is a truism, of which no medical practitioner can be supposed ignorant: it is to be wished, however,

that this principle were acted upon, as well as known.

Dysentery has, but in very few instances, appeared as an idiopathic disease.

Scurvy and ulcer are now nearly unknown in the Mediterranean, which may be fairly attributed to the *excellent regulations and unceasing care of the Commander in Chief, in procuring liberal supplies of fresh meat, vegetables, and lemon juice;* together with the great attention paid to ventilation, cleanliness, dry decks, and generally to the comforts of the ships' companies of the fleet.

This volume has been written amidst the vicissitudes of a sea life, and the discharge of active professional duties, unaided by the advantage of a library; but perhaps the latter was not necessary to it's composition. With such materials as the author possessed, unquestionably a more extensive work might easily have been produced; but it has been his wish to write a useful book,

not a large one: he hopes it will be found the former; and under this impression, submits it to the candour and judgment of the public, confident that "*whilst speculative opinions pass* "*away, the inferences drawn from nature and* "*truth, remain permanently on record.*"

PREFACE

TO THE SECOND EDITION.

THE favourable reception which the first edition of this work met with, and the numerous communications the author has received, of the success attending the treatment therein recommended, both in the West Indies and America, as well as in the Mediterranean, have induced him to revise the whole, and to offer the present, he trusts, in an improved state, to the profession and the public.

In the former edition, the disease was described under the name of "The fever *commonly called* the Bilious Remittent," not from a conviction on the part of the author that the term remittent was proper; but in compliance with the general custom of recognising the endemic he treated of by that appellation. The general term of "Mediterranean Fever" has now been adopted, as more applicable to this disease.

Little alteration of consequence has been made in the first parts of this work, nor, indeed was it, in the opinion of the author, required; but the history of the endemic of Gibraltar, has received *great and important additions,* which fully support the previous deductions he had drawn.

The subject of the Gibraltar Fever has now become a national one, and the *dogmatical* manner in which the various peculiarities ascribed to it *by a few,* have been brought forward by Mr. Pym, having produced impressions on the minds of persons who have never seen the disease, highly detrimental, in the author's opinion, to the interests of humanity and sound policy; he has entered into an examination of that gentleman's statements, and he feels assured, has fully and completely refuted them. Mr. Pym's book however will be attended with one public good. The circumstances so strongly insisted upon by him, of the importation and contagious nature of the disease, having been fully disproved by a fair investigation of the alledged facts, on which he attempted to establish that opinion: these *suppositions* being proved

to be chimerical, the whole reasoning erected upon them necessarily falls to the ground, and the public mind is relieved from the apprehension and terror, excited by the idea of importation and contagion; and the complete overthrow he has received on every point, whether connected with the symptoms, peculiarities, or treatment of this disease, will, it is hoped, a little abate his intolerant disposition, and induce him in future to bring forward his own opinions, with more candour and liberality towards others.

The miseries attending the belief in the contagious nature of the disease are manifold, and have already been adverted to in this work, as applying to Spain and America; the following extract from the 12th Vol. of the Medical and Chirurgical Review, when speaking of the fever of Gibraltar in 1804, brings the matter nearer our own doors, and cannot be too often read by those who may be called upon to bear a part in such calamitous scenes. "If it be true that "the disease is not contagious, then the se- "clusion of persons on board inconvenient and "expensive floating lazarettos—the burning of

" beds and furniture—the desertion of the re-
" latives of the sick—the terror of being in-
" fected by intercourse—the apprehension of
" the cause of the fever being imported into
" this and other countries—these and other
" measures and effects on the public mind,
" become serious evils to the state, and indi-
" vidual family calamities"—and the editor adds in a note, " it is a *fact,* that many were found " dead in their beds without an attendant."

The reader will readily perceive, that had such been the author's inclination, he has had ample opportunity of retorting upon Mr. Pym, the indecorous language made use of by that gentleman towards himself; but as he did not enter into the discussion of this subject, from motives of a personal nature to any man, and as he neither thinks the cause he is advocating, (which he sincerely believes to be that of humanity and truth) or the character of a liberal profession, could be at all benefited by doing so, he has left that *peculiarity,* and as far as respects the immediate subject of dispute, he trusts, that alone, entirely in his adversary's possession.

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PART I.

In superioribus obiter admonui, è febribus nonnullas in malignarum classe vulgo reponi, cum indomita symptomatum saevitia, quae huic opinioni patrocinari videtur, non á venenosa morbi indole, sed à therapeia perperam administrata proficiscatur.

SYDENHAM.

A

PRACTICAL ACCOUNT

OF THE

MEDITERRANEAN FEVER,

AS IT HAS APPEARED IN THE

Ships and Hospitals of His Majesty's Fleet, on that Station,

IN THE YEARS 1810, 1811, 1812, 1813.

HISTORY OF THE DISEASE.

DURING the spring months, and the early part of summer, the ships of the fleet have generally enjoyed an exemption from fever; and, with one exception, I am not acquainted with any instance where the crew of a ship has been attacked, after being some time at sea; the disease, in its epidemic state, being confined generally to such ships as are, or have been, refitting in port.

Towards the end of June, or commencement of July, slight attacks of fever begin to pre-

sent themselves. The patient complains of considerable head-ach, with nausea and prostration of strength ; the eyes are somewhat suffused, and the countenance a little flushed ; the tongue is white and moist, with considerable thirst ; the skin is at times moist, and the temperature but little increased ; at other times it is dry, and the heat pungent. The pulse is in some cases full and strong, beating at the rate of 120 in the minute ; in others it is less so, and in some the increase of velocity is scarcely perceptible : there is commonly constipation of the bowels, and loss of appetite. Though this is, for the most part, the appearance of the fever of the summer on its first attack, yet in many instances it has been found to put on a far more serious aspect, and assume the form of the severer degree of this fever, which occurs in the autumn. This, however, has in general been traced to some irregularity committed by the patient, as exposure to the sun or night dews ; or else to the plan of treatment adopted at the commencement of the disease. At this time the gastric symptoms are seldom severe, the head being the organ most materially affected, and to the relief of this, and the free evacuation of the intestines, must the principal attention of the medical attendant be directed. As the summer advances, the attacks become more formidable, and

accordingly require the most prompt and efficacious treatment.

The patient first feels a degree of lassitude and prostration of strength, (in some the latter symptom appears very considerable;) this is succeeded by a sense of chilliness, extending along the spine and lumbar region, which is followed by increased heat and severe head-ach, referred chiefly by the patient to the forehead and temples; and in the severer cases it extends in the course of the longitudinal sinus. A deep seated pain in the orbits is also experienced; the eyes are sometimes unnaturally prominent, with a watery inflammatory appearance, and impatience of light. There is often a very considerable degree of redness and tumefaction of the face, the skin having a glossy shining appearance; the flushing of the face frequently extending downward, as far as the superior part of the sternum: the tongue is white or slightly yellow, and commonly moist, with a bad taste in the mouth. There is a sense of uneasiness in the epigastric region, with nausea, and in some patients a vomiting of a matter resembling bile; pains in the joints, back, and calves of the legs, disturbed sleep, and constipation of the bowels, are amongst the symptoms usually observed. The pulse for the most part is full and hard, though not always, particularly where the gastric symp-

toms are severe ; at other times it is oppressed, but rises under the lancet. In its first state, which generally accompanies the severe local affection of the brain, it beats from 110 to 120 in the minute, sometimes upwards of 130, but at this period it is not a very common occurrence. In its second state, which generally accompanies a more advanced stage of the attack, the pulse seldom exceeds 90 or 100, and is not so full ; nay, is frequently observed to be slower than natural ; there is generally a throbbing of the carotid and temporal arteries, with great thirst, and considerable anxiety. The superior parts of the body are sometimes covered with a profuse perspiration, but generally the skin is dry, and the temperature increased; if the disease be advanced, the heat is often pungent, and there is through its whole course a loathing of food. Severe rigors sometimes, but not very commonly, precede the hot stage of the disease.

In many cases, however, this fever makes its attack without any very sensible previous indisposition, and in several instances, the patient, while at his usual work, has dropped down in a state of insensibility ; but this stage of the disease seldom lasts long, reaction takes place with increased circulation, and the most marked symptoms of determination to the brain. During the winter months, the morbid affection of the

brain is not at all times so prominent a symptom, nor are the bowels so much constipated: there is often a more anxious look in the beginning, some pain upon pressing the abdomen, and the pulse is seldom so full, when the last mentioned symptom is considerable. The attack has also been accompanied by cynanche tonsillaris, but this soon ceases to be a prominent symptom. In the summer and autumnal months, an attack of cholera morbus, or diarrhœa, has preceded this fever.

If the patient has not complained till the second or third day of his illness, if the disease has been treated by emetics and stimulants; or when the attack is violent, if the most prompt means have not been adopted, the patient will commonly exhibit a different appearance. The head-ach is still severe, but accompanied by stupor, disinclination to answer questions, and indifference to surrounding objects: the eyes have a duller look than usual, and frequently the preceding inflammatory appearance, has in some measure given way, to a slight yellowness of the tunica adnata, which soon extends to the face and neck, and often, in twenty-four hours from the time of its appearance, to the whole body. The tongue is now covered with a thick yellow coat, or is brown and dry in the middle, the edges having a red inflammatory appearance; the prostration of

strength is considerable; the anxiety and pain in the limbs great; the uneasiness in the epigastric region is urgent, and there is frequent vomiting of a matter resembling bile, and most harassing singultus: the pulse under these circumstances is commonly much smaller, varying from 100 to 120, and often is more frequent. There is at this time no very considerable increase of temperature, the features exhibiting rather a shrunk and anxious appearance, with occasional partial flushings. In severe attacks, about the third day, there is often an appearance of a complete remission, but the evening puts an end to the delusion; an exacerbation takes place, with great increase of all the dangerous symptoms. Unhappily this deceitful period has often been mistaken for a real remission of the symptoms, and both tonics and stimulants have been given, with a view to prevent a recurrence of the paroxysm; but vain, indeed, are all such efforts, they serve but to increase the malady.

As the disease advances, the pain and uneasiness about the epigastric region, continue to increase. There is now almost constant vomiting; considerable pain upon pressure; great restlessness, with oppression of the præcordia. The abdomen is likewise painful, with frequently thin, black, fœtid, and sometimes gelatinous stools. The suffusion of the skin, at first

of a bright yellow, now assumes a darker hue; the skin is at times moist, or there are partial sweats, and commonly a disagreeable fœtor is exhaled from the person or linen of the patient. Under all these distressing circumstances, he often retains his intellect, answering questions rationally; but there is almost always some degree of wandering, and inattention to surrounding objects. If the head has been materially affected, there is occasionally considerable delirium, which commonly terminates in a state of coma. The pulse becomes irregular, sometimes full, at others quick and small, and often intermitting. The uneasiness about the epigastric region is intolerable, and some patients have complained of a burning sensation, extending upwards to the throat. The vomiting is incessant, often of blood, succeeded, *in some cases,* by a matter resembling coffee grounds; blood exudes from the gums and fauces, with hæmorrhage from the nose, and often in considerable quantities from the anus. About this time subsultus tendinum comes on, with picking of the bed-clothes, constant tossing in the bed, and suppression of urine, with an irksome pain across the pubes. In many cases complete ischuria renalis exists; in a few the bladder has been found distended, and required the introduction of a catheter; in many, the stools are passed involuntarily. Swel-

ling and suppuration of the parotids, petechiæ and vibices, though not general symptoms, have in several cases occurred. The tongue is now covered by a black crust, the teeth are surrounded by sordes; the breathing becomes more laborious, with great action of the respiratory muscles. The anxiety is extreme; the pulse sinks so as to be sometimes scarcely perceptible, and intermits; cold extremities, clammy sweats, terminate the scene, frequently on the third or fourth, but generally from the fifth to the eighth day; though sometimes existence is protracted beyond that period.

These are the symptoms which mark the progress of this fever, under its most formidable mode of attack, or when it has been neglected, or improperly treated. In many instances it proceeds through its whole course, bearing strictly the form of a continued fever; in others, there is a deceitful remission about the third day. But in by far the greater number of cases, though there are evening exacerbations, the remissions in the morning are so slight as scarcely to deserve that name. The most attentive observation, by myself, and others on whom I could rely, has failed to detect the distinct remissions ascribed to this disease by Dr. Cleghorn.

The train of symptoms, which have been just enumerated, will not always be observed in the

same patient, nor is death itself uniformly preceded by such appearances as I have described; particularly when the disease terminates fatally before the third day, or before the first stage of the disease is past. In such cases the brain is the part more immediately affected, and death has sometimes taken place suddenly; the pulse remaining full, soft, and even somewhat strong, till nearly the last moments.*

I have before observed, that during the early part of summer, the brain is the organ most violently attacked; when the heat increases, and the periodical rains fall, the gastric symptoms become severe, but without diminution of the local affection of the head. As autumn advances, there is often an inflammatory affection of the intestines, frequently from improper treatment, terminating in dysentery. In the winter months, this disease is often accompanied by severe and evident inflammation of the lungs. In the summer and autumn, slighter affections of the lungs are occasionally observed, but the patient seldom complains of this, unless when asked.

The symptoms which evince a more favourble termination, are the head-ach less severe in the first stage; the prostration of strength less

* Case V. is an example of this.

remarkable; and the affection of the stomach more moderate; the pulse soft, and less frequent; and a gentle *uniform* moisture covering the whole body. The absence during the progress of the disease of the severe gastric symptoms, of the yellow suffusion, of ischuria, dyspnœa, singultus, and subsultus tendinum; the bowels moderately open, without pain on pressure.

There are few severe cases where the disease is protracted beyond the third day, and the gastric symptoms are urgent, in which the yellow suffusion does not make its appearance; and the earlier it is observed, and the deeper hue it assumes, so in proportion is commonly the danger of the patient; not only as to his present recovery, but also as to the ultimate consequence of the fever; as in almost every instance, it portends a protracted convalescence, and not unfrequently is followed by a diseased state of the liver, dropsical swellings, or irregular attacks of intermittent fever, probably depending on a morbid state of the viscera. The foundation of phthisis pulmonalis is often laid by this disease, and the patient, though saved from its immediate, is destroyed by its remote effect.

During the prevalence of an epidemic of this kind, slighter cases will undoubtedly occur; in-

deed some so mild as to require little medical treatment, beyond abstinence, rest, and a few doses of purgative medicine; but the practitioner should always be on his guard, as the approaches to a more concentrated form are often insidious, and the symptoms sometimes become violent and unmanageable, when they are little expected to do so.

PROBABLE CAUSES.

To the influence of marsh miasma, aided by causes to be hereafter mentioned, has been assigned the appearance of this disease in most of the ships of the fleet where it has occurred, and many circumstances induce me to believe, that it has a very considerable share in producing an attack.

It is not my intention to enter into an examination of the opinions respecting the production of fevers by the contiguity of marshes, the fact is admitted by every one, that their influence is great.

Though there are no very extensive marshy grounds in the neighbourhood of the ports of Minorca and Malta, the two places, where, from the nature of my duty, my principal observations have been made; yet at the head of each harbour

there are some of this description*, which, during the summer and autumnal months, emit very offensive exhalations, and exert considerable influence on the health of the surrounding inhabitants. In the interior of Minorca, there are still some undrained lands, and the people residing near them, are uniformly subject to the attacks of fever. The inhabitants of Mahon, who have country houses, leave them in the summer, and return to town; stating as a reason for doing so, that the farmers are particularly liable to the attacks of tertian fever at that time. From enquiries I have made, and indeed from cases coming under my own observation, I have no reason to doubt the fact.

The harbour of Mahon is divided by an island,

* It is a circumstance not a little extraordinary, that so close an observer as Cleghorn, should have overlooked the existence of that marsh, in a situation so near the town, and in his day occupying a much larger space, which is now converted into the productive gardens of St. John. This important improvement was begun by Brigadier General Kane, to whom the inhabitants of Minorca are much indebted. Since the draining of the greater part of this marsh has been completed, the sea has been gradually receding from the head of the harbour, leaving (particularly during the prevalence of the easterly winds) a large portion uncovered; from which, in the summer and autumn, the most offensive exhalations proceed.

on which stands the Naval Hospital; ships anchored during the summer or autumn above the Hospital Island, for any length of time, rarely escape, without a number of their men being attacked with fever: while the ships anchored below, are commonly entirely free from it. Independent of the crews being within the influence of the marsh, by lying above the Hospital Island, the common sewers of the town of Mahon, considerably elevated above the sea, pour their contents into the upper part of the harbour, and doubtless have an unsalutary effect on the atmosphere. In Mahon harbour, the flux and reflux is solely influenced by the winds, the westerly producing a rise, and the easterly a fall of water, according to the force with which they blow; and, in summer, when there is always much calm weather, the water in the upper part of the harbour becomes perfectly black and stagnant, often continuing so for a week together. A recent instance will exhibit the foregoing statement very evidently. The Curaçoa and Aigle frigates, returning from a cruise in the beginning of October, 1812, the former anchored above the Hospital Island, opposite English Cove, the latter below, opposite George's Town; they remained in harbour refitting nearly three weeks, proceeding together off Toulon; the Curaçoa had thirty-two men attacked with the usual

fever, the Aigle not a single man. The crew of the Swiftsure, lying nearly in the same place, were attacked with a similar disease, as were also the ships' companies of the Undaunted and Berwick, which had refitted at the arsenal.

In Malta it has always been remarked that ships fitting at the Dock Yard, situated at the upper part of one of the arms of the harbour, are more subject to attacks of fever, than those lying out at their anchors; and on moving a ship, where it was prevalent, into Beguy Bay, the disease has uniformly ceased.* At the upper part of Malta Harbour there was, during the time of the order of St. John of Jerusalem, a very considerable marsh, and the inhabitants of a village (Cazel Nuovo) in its neighbourhood, were obliged, on account of the insalubrity of the situation, to abandon it; indeed, with the exception of some distilleries lately established there by British merchants, it is still deserted. During the benevolent government of Sir Alexander Ball, this marsh was nearly drained, and the inhabitants of Florian were in a great measure relieved from its unsalutary effects. The minuteness of the foregoing detail may, in a common point of view,

* The observation relative to the sewers, flux and reflux in the harbour of Mahon, applies equally here.

appear superfluous ; but as the direct influence of these causes on the health of the ships is undoubted, and as the means of obviating them are in our own hands, this detail is important to our consideration.

It has uniformly been found, that intemperance in the use of spirits and wine, exposure to the sun, or night dews, after a fatiguing day, are the most powerful exciting causes of this disease, and those cases which immediately followed intemperance, have been observed the most untractable.

The disease is commonly the most severe in the young and plethoric. The boats' crews have generally suffered much ; and the crews of ships receiving prize money, and permitted to go on shore, seldom escape with impunity.

I have been unable to detect the agency of contagion in the production of this disease, nor from the reports of others, have I any reason to believe it ; but it is not inconsistent to conjecture, in the latter stages of this fever, where proper attention may not have been paid to personal cleanliness, to the removal of the excretions, and to ventilation where the sick are crowded, that the surrounding atmosphere may be vitiated, and contagion ensue.

I have not seen an instance, however, where an attack of this fever could be traced to the

action of contagion ; and in the present highly improved state of the discipline of the navy, it is not probable any cause should be found, which would either generate or prolong it. It will be seen in another part of this volume, that an attack of this fever occurred on board the Kent of 74 guns, while cruising off Toulon, nearly three months after leaving port, and I do not believe that there is a ship in the British navy, where more attention was paid to cleanliness and ventilation, and generally to the health and comforts of the men, than in that under the orders of Captain Rogers.*

METHOD OF CURE.

In order to make myself better understood, as to the plan I would recommend for the cure of this disease, it will be necessary to divide it into four stages.

1st. From the beginning of the disease, till the commencement of gastric symptoms, or the appearance of the yellow suffusion, which commonly occupies a period of three days, though sometimes less.

2d. From the accession of the severe gastric

* This accomplished Officer lately died in France.

symptoms and yellow suffusion, * till the appearance of nervous symptoms; the duration of which stage is various.

3d. From the accession of nervous symptoms, which is marked by the increased uneasiness about the epigastic region, ischuria, singultus, or vomiting of a matter resembling coffee-grounds, &c. till the termination of the disease, in death or convalescence.

4th. From the commencement of convalescence till the final recovery of the patient.

1st. In the first stage of the disease, the prostration of strength, the watery eye, the oppressed pulse, the anxious look of the patient, and disposition to syncope on abstracting a few ounces of blood from the arm, are but too well calculated to deceive an inexperienced or inattentive observer: but let him not be led astray by such delusive appearances; he has at this period a disease purely inflammatory to contend with; the fate of his patient is in his hands. At this time it is a disease simple in its nature,

* The yellow suffusion is more an incidental than an essential symptom in the features of this disease. In many severe cases it does not appear till at the moment of, or after death.

and easily to be managed; but if allowed to run on to disorganization uncontrouled, or if by improper treatment, the inflammation and congestions be increased, it soon arrives at that stage, when the utmost powers of medicine will be exerted too often in vain.

The first step is the removal of the local affection of the brain, on which depends all subsequent success, and which being removed, generally prevents the dangerous symptoms of the after stages. For this purpose, blood-letting, both general and local, should be had recourse to, and repeated according to the urgency of the symptoms; the benefit derived will be greatly increased, by the use of purgatives, and free ventilation; no apprehension need be entertained of the patient's catching cold. It will often happen, after a few ounces of blood have flowed, that syncope will be induced: this must not prevent the repetition of the bleeding, while the symptoms require it. Syncope will rarely occur when the same quantity is taken from the temporal artery. In the course of an hour, the bleeding may generally be repeated, and thirty or forty ounces taken away, without producing it. In bleeding, the patient should be placed in a horizontal posture. I have often seen a bleeding of thirty ounces from the temporal artery, aided

by a brisk purgative, put an end to the disease.* In the mean time, though a sufficient quantity of blood may not be obtained, by reason of the syncope above-mentioned, a brisk dose of pulv: jalap: cum submur: hydrarg: should be given, the speedy and free evacuation of the bowels, being an object of the utmost importance. It is scarcely necessary to caution the practitioner, that both blood-letting and purgatives should be ordered, with reference to the age and habit of the patient. It will frequently happen, (as I have before observed,) if the patient complain sufficiently early, that the loss of thirty ounces of blood, more particularly from the temporal artery, will produce a complete remission, especially if the bowels be freely evacuated; but the intestines are commonly in a state so torpid, that it frequently requires the repeated exhibition of purgatives, aided by clysters, to effect this purpose. The head-ach, if not entirely removed, is greatly ameliorated by the abstraction

* In hac febre, sanguinis determinatio capiti compluries apparet, et cerebri compressione, venæsectione prætermissâ, forsan est causa virium prostrationis, comatis et delirii festinantis; igitur missioni e brachio arteriotomia temporalis præferri debet. Utut res se habet, certè ità multum proficit sanguinis missio, capitis dolorem, dicto citius levando, ut æger ægerrimé orificium claudi sinat. (Grant. Tractatus de febre Flava, published in Jamaica in 1805, page 17.)

of blood from the temporal artery; in many instances so immediately, that the patient has declared, he felt the pain escaping with the blood.

If before this evacuation, the pulse should have been oppressed, it will rise under the lancet;* and patients, who have been led or carried into the hospital or sick-birth, (so great has been their apparent debility), have, after the loss of thirty ounces of blood, risen and walked about, expressing their surprize at their former condition. The relief, thus obtained, is not in all cases permanent; *the patient must be carefully observed;* and on a return of head-ach, increased vascular action, heat, or other symptoms of pyrexia, the lancet must again be resorted to, as well as the use of purgatives. The great object is the removal of the local affection of the brain, or other organ, and the production of a complete remission of the febrile symptoms, in the least possible time, by which the dangerous symptoms of the latter stages of the disease may be prevented or greatly mitigated, and a perfect and rapid recovery insured. In one instance, I ordered blood to be taken from the temporal artery, to the amount of ninety ounces, in the course of six hours. I am confident that nothing but the boldness of the practice saved the patient;

* An example of this is afforded by Case I.

(see Case III.)* He was a convalescent on the third day after he came under my care, and recovered his strength very rapidly; this, perhaps, may be called an extreme case, but the principle is applicable to all. The local affection and febrile symptoms must be immediately removed, and it is absolutely necessary to persevere till this be accomplished. Should the patient be merely ordered to be bled, without attending to the effect, probably little good will be done, and in all likelihood much harm. Such treatment has come within my own observation, and I could not wonder at the event; it is a practice without principle, equally injurious to the case of the patient, and the credit of the practitioner.† Notwithstanding all our efforts, the febrile symptoms will, at times, continue, though diminished in strength: in the evening, after repeating the bleeding, if necessary, benefit will be derived from giving a pill, composed of submur: hydrarg: pulv: antimon: āā

* It was on the same day this patient was received, that I dissected the body of Tonge, (Case V.), which affords such strong proof of high vascular action, as decided me in the treatment of this man's case.

† "At in tanta timiditate, et parca detractione quî fieri po-
"test, ut quis recte possit judicare, quantum ea in pestilenti-

gr: ij, followed by a dose of julep: ammon: acetat: and allowing the patient to use any cool refreshing drink he may fancy. A strict antiphlogistic regimen must be pursued, and as few bed clothes as possible allowed on the patient's bed. I should consider this observation, concerning the bed-clothes, and a preceding one, respecting ventilation and catching cold, quite superfluous; but that I have seen unfortunate objects, labouring under fever, in the months of July and August, with the thermometer at 84°, shut up from the cool refreshing breeze, with their beds heaped with blankets ; and have been told by the Surgeon, on enquiry, that it was to prevent them catching cold!! Crude, indeed, must be that man's ideas, and little can he be acquainted with the principles of that profession, he has undertaken to practise.

It is impossible to lay down rules for the treat-

" morbo prodesse valeat, aut obesse ? Non enim morbus, " pro cujus curatione requirebatur detractio librarum quatuor " sanguinis, in quo una tantum detrahitur, si hominem inter- " ficiat, ideo interficit, quia sanguis est missus, sed quia " non justo modo missus est, nec forte etiam opportune. " Verum nebulones nequissimi, et ignavissimi, in id semper " culpam convertere satagunt, non quod nocuit, sed quod " per nefas á cunctis vituperari exoptant. Aut si id nequitia " non faciant, ignorantia tamen pravae dispositionis efficiunt: " utraque certe perniciosa : sed illa magis." (Sydenham.)

ment of every case that may occur, but these are the principles on which the cure should be conducted: their application is fully exemplified in the subjoined Cases.

If the disease remain on the following day; if the pulse be still full, hard, or strong, with increased velocity; if the flushing and tumefaction of the face, with suffused eye be still present; or if the head-ach continue, with increased heat, recourse must again be had to the lancet and purgatives, and blood be evacuated according to the urgency of the symptoms. In many instances, where the patient has not come immediately under my care, when taken ill, or where the disease has been obstinate, and the symptoms violent, blood has been taken to the amount of 130 or 140 ounces, and even as far as 200, with the most marked advantage; and so far has this been from inducing any great debility, or a protracted convalescence, that the restoration of the patient to perfect health and strength, has been most rapid, and relapse has seldom taken place: but such large evacuations must be confined to the early stage of the disease. It is of the utmost importance, that the state of the bowels be attended to minutely: jalap and calomel, during the whole of the first stages, unless there be any material affection of the intestines, are the best purgative to use, and sit more easily

on the stomach ; but where there are symptoms of enteritis, I have considered ol: ricini: or a solution of sulphate of magnesia, more appropriate medicines.

It may often happen, though the patient be received under care during the first stage, that much mischief has already been done by the use of emetics or stimulants. If the case be severe, an emetic will do much harm, and though by the subsequent treatment, the symptoms may be greatly alleviated, a remission in the early stage, will be very doubtful; and the extreme irritability of stomach, which generally characterises the more advanced stages of the disease, will be much increased, and with it the whole of the dangerous symptoms. He who expects to remove nausea by the exhibition of emetics in this disease, will, when too late, find himself miserably deceived. The effects resulting from stimulants, given at this period, cannot be equivocal. After due evacuation, when a degree of head-ach remains, with increased vascular action and heat, the use of the cold or tepid affusion, according as circumstances may allow or require them, will be attended with the best effects. But the young practitioner must not confide in cold or tepid affusion for the cure of this disease; they are most useful auxiliaries, but never of themselves to be depended upon.

2d. In the second stage of the disease, much is still in the practitioner's power to do for the safety of the patient ; but even this will greatly depend upon his preceding treatment; whether the disease may have been treated as an inflammatory or as a typhoid affection by emetics and stimulants : in the first instance, the symptoms will be commonly moderate; in the second, they are as generally severe. When the head-ach is present, with flushing of the face, and suffusion of the eyes, and the pulse firm, blood should be taken away ; and at this time particularly from the temporal artery, as a smaller quantity from thence, will relieve the morbid affection of the brain, and unload the distended vessels; but the bleeding should, for the most part, be small ; and during the time the blood is flowing, the pulse and general appearance of the patient, should be strictly attended to. If the pulse rise, we may commonly take from ten to sixteen ounces at a bleeding, but should rarely exceed that quantity. It is unnecessary to say, that the bleeding may be repeated with advantage, if the symptoms require, and the state of the patient allow it. If, however, during the bleeding, the pulse should sink, it will be prudent immediately to desist. A blister applied to the head at this time, will be attended with manifest advantage. Care should be taken to procure daily evacuations ; but the

more powerful cathartics must now be laid aside, as their operation will be found too rough for the advanced periods of the disease ; small doses of castor oil, or purging enemas, will be found of much use. The irritability of stomach, with uneasiness in the epigastric region, which are often at this period very distressing, will be greatly relieved by the application of leeches,* and the use of the saline draught, in a state of effervescence, to which may be added *small* doses of tinct: opii: to be regulated by the pulse : the application of a large blister to the region of the stomach, has also been attended with great success. In some instances, as in that of Partington, (Case I.), the saline draughts avail little; and, when every thing else is rejected, a little warm wine, with sugar and spice, will often be retained. About this time, a degree of stupor will sometimes supervene, and I have often removed it by the application of a blister to the nape of the neck or forehead, or a few leeches to the temples. The patient is also at this time, often distressed by pains in his legs, and great uneasiness across the pubis ; these symptoms will be much relieved by the application of warm fomentations. Particular enquiry and ex-

* See Case X.

amination should be made in order to ascertain whether there be any affection of the abdominal viscera, when bleeding, blisters, and the warm bath should be resorted to, according to the urgency of the symptoms, and state of the patient. I wish particularly to impress the utility of the warm bath; under these circumstances, it will often save the patient, when, from his other symptoms, bleeding would produce fatal consequences. It is obvious, that bleeding must not be practised, where the patient is much exhausted; but the warm bath, blisters, and large frequently repeated emollient clysters, will be of the utmost benefit. When the morbid heat is considerable, with general irritability, and the patient exhausted from the severity of the gastric symptoms, or a protracted disease, great advantage will be derived from the use of the warm or tepid bath, or sponging the body.

3d. We are now arrived at the most dangerous and distressing stage of the disease, where, unhappily, the powers of medicine are of least avail; the pulse begins to sink or intermit, and the nervous symptoms become urgent, constituting the third stage. Little more can now be done than to look on, and endeavour to obviate symptoms as they occur. Singultus is a dangerous, and commonly a most harassing symptom at this time; it will often be

relieved by camphorated julep, to which may be added, opium and æther. Musk is also sometimes of service, but my experience does not warrant me to speak decidedly upon it. If the pulse sink, the stimuli must be increased; and, under these circumstances, I have found the carbonate of ammonia, with aromatic confection, of singular benefit:* but while we endeavour to restore the balance of the circulation, care must be taken not to induce a state of secondary excitement, and as the pulse rises, the stimuli should be decreased. Constant attention must still be paid to the daily evacuation of the bowels; but at a period, when the excitability of the system is nearly destroyed, powerful cathartics will be attended with the most deleterious consequences: clysters are particularly serviceable at this time. As the disease advances, the excretions are, at times, voided involuntarily; in a few, I have observed a retention of urine, and in these last cases, the catheter should be used; but as a general symptom, there is far oftener a deficiency in the secretion of that fluid. Frequently in this state, the stomach rejects every thing; we

* I have often, in the fevers of England, observed great benefit from the use of this medicine, at this stage of the disease, particularly in protracted cases of the Corunna fever.

may now safely indulge the patient *moderately*, with any thing to which his fancy leads him. Bottled porter, wine, and brandy and water, have been found beneficial; but no remedy can be relied on with any degree of certainty: whatever calms the irritability of the stomach, and moderately supports the excitability of the system, is useful. A few spoonfuls of arrow-root or sago, with wine and spice, given occasionally, will often be retained by the patient, and greatly, at this period, assist the cure.

The termination of this disease in intermittent fever, has seldom occurred in my own practice; but I have occasionally seen it in that of others, where early evacuations had been neglected. It appeared to be in general occasioned by some morbid affection of the liver, or other viscus, and the cure consequently depending upon restoring the healthy state of their functions. For this purpose small doses of calomel or pil: hydrarg: will be attended with much benefit, and their use should be continued until some sensible but slight effect be produced on the salivary system; when the disease often ceases of itself, or is readily removed by the use of Peruvian bark. Where the yellow suffusion has been great, a protracted convalescence is almost the certain consequence, attended often with irregular affections of the bowels, and dyspeptic

symptoms; in these cases, small doses of the pil: hydrarg: with an occasional gentle purge of ol: ricini: or rhubarb, will be attended with the best effects. Several patients under similar circumstances have complained of vertigo,* and tinnitus aurium; and with them the same plan of treatment has been eminently successful.

4th. When a complete remission is procured in the early stage of the disease, and is followed by convalescence, the desire for food soon returns; but at this, as well as every other period of convalescence, we should be extremely cautious how we indulge the patient, as repletion in the early stage will almost infallibly occasion a relapse; and, at any period, will retard the cure. The return of the patient to an increase of diet should be gradual, and, except in cases where he is exhausted by a long protracted disease, wine, for the first few days of convalescence, is quite unnecessary, and often injurious. That which is called in the naval hospitals half diet, will be found ample for his restoration. I have never observed a full diet accelerate the recovery of a patient from fever, but I have often seen it retard it. During the whole progress to recovery atten-

* See Case IX.

tion should be paid to the state of the bowels, and at least one evacuation procured daily. The only medicines I have found necessary, as tonics, are the infusion of quassia joined with some aromatic, and occasionally a dose of the diluted sulphuric acid, two or three times a day. On a few occasions, I have ordered an infusion of Peruvian bark; but I prefer the quassia, as it in general sits easier on the stomach, and is commonly less nauseous to patients recovering from fever.

It now only remains for me to notice some remedies which have hitherto borne an important part in the treatment of this fever, and are still employed by many.

The first to which I shall advert are emetics, and of these medicines I can assert with confidence, that when given in doses, so as to produce full vomiting, they have been attended with the most unfavourable effects; head-ach, vomiting, and local affections, have been much increased by their use; they seldom or ever succeed in removing nausea; and the second stage of the disease, with greatly increased gastric symptoms (if I may be allowed the expression) has been prematurely brought on by them.

Sudorifics have never appeared to me to be attended with the smallest advantage, especially when employed in the early stage. It is well

known to every practitioner, that they often fail in inducing perspiration, and under such circumstances, their general action cannot but be highly unfavourable. At the commencement of the disease, the patient is often covered with a profuse perspiration, from which he derives no relief.

Antimonial powder, given in doses of two grains, combined with the same quantity of calomel, generally assists in keeping the bowels open ; but this should only be administered in the early stage. Whenever irritability of stomach may be present, antimony, under any form, is totally inadmissible; and, when taken under such circumstances, rarely fails to aggravate the sufferings, and increase the danger of the patient.

Peruvian bark, when given while symptoms of pyrexia remained, has been attended with very mischievous effects. Under its use, mortality has been great, relapse frequent, and as in the cases of the Temeraire and Invincible,* dysentery attacked nearly all the patients, who had had fever, in a severe form; nor was there one instance, as far as I could learn, of its being given during a supposed remission of the symptoms,

* The relation of this will be found in the second part of the volume.

where it prevented a return of the paroxysm. Too often it has been given with wine at the commencement of this disease, when the tongue has soon put on a brown, dry, and furred appearance; the anxiety, delirium, and irritability of stomach, have been much increased; the whole train of nervous symptoms soon became formidable, resisting every means of alleviation, till death has put a period to the sufferings of the patient. When the disease however has put on an intermittent form, I have experienced the usual effects resulting from its use.

I have heard of the utility attending the exhibition of mercury in this disease; but I can with truth affirm, that employed in any other shape than as a purgative, I have never seen it in the early stage attended with the smallest advantage.*

In long protracted cases, where a morbid affection of the brain, or other viscus, has been the consequence of allowing the first stage of the disease to proceed uncontrouled; and particularly when there was reason to suppose that effusion had taken place within the cranium; I have observed the most decided good effects

* It is but just that I should add, that some of the surgeons thought benefit was derived from the use of calomel in the first stage, carried so far as to excite ptyalism.

from its use in small doses. In some cases of irritability of stomach, where calomel has been given, joined with opium, I have seen relief ensue; but I have also observed the same effect from the opium without the mercury.

The cases of Singleton and Murphy, treated by Mr. Boyd, and the case of Carthagena fever by Mr. Rae, furnish evidence of the inutility of this medicine in arresting the progress of the disease. The reader will find in a subsequent part of this volume, that the sick of the Invincible and Temeraire were principally treated by mercury, yet the deaths were more numerous, and the relapses more frequent, than in any of the other ships during my service in the Mediterranean. It must, however, be acknowledged, that the diet which was given to these patients, might have contributed to such a result. Relapses seldom or ever occurred either in the hospitals or ships, when the patient was properly evacuated at the commencement, and where attention was paid to diet and open bowels during the convalescence.

Regarding the use of mercury in the cure of the endemic of America, Dr. Rush observes, "that it seldom salivated until the disease in- "termitted or declined." "I saw several cases "(says the same author) in which salivation "came on during the intermission, and went off

" during its exacerbation,* and many in which " there was no salivation until the morbid action " had ceased altogether in the blood-vessels by " the solution of the fever."

Dr. Dickson, whose situation as physician of the Fleet on the Leeward Island station for several years, afforded him ample opportunity of judging, states in his circular letter inserted in the Edinburgh Journal for January 1813, that " the mercurial plan in Caribbean fever, " has very repeatedly had the fullest trial, and " *the utmost I can say is,* that I have seen it " succeed in certain low, mixed, protracted " cases, where fever had almost or totally ceased, " yet the brain, &c. remained affected or op- " pressed. But I have great doubt, and some " of those most conversant unconditionally " deny, that ptyalism can be excited during the " existence of increased heat and febrile action, " and hence it is inferred, that it is not the " cause, but simply an indication of the cessa- " tion of fever."

In the account of the yellow fever, written as it appears by Dr. M'Arthur, so justly eulogized by Mr. Johnson, and inserted in that gentleman's valuable work on the " Influence of Tro-

* The same was observed in the case of an officer of the 67th regiment during the fever of 1814, at Gibraltar.

" pical Diseases ;" not one word is said of the administration of mercury, except as a purgative, in this disease. Indeed I know that the opinion of the gentleman in question coincides with my own. But one of the strongest proofs of its inadequacy to the cure of the yellow fever (if we except the failure of it in the cases of the artillery recruits, mentioned by Dr. Chisholme*) will be found in the following quotation from page 294 of Dr. Jackson's work on that disease :—" Out of fif-
" teen cases of fever (says the Doctor) which
" were put under the care of Mr. Lind, on the
" first day of the disease, and treated with the
" utmost attention, five died, *in three of whom*
" *salivation actually took place ;* five recovered
" in whom no salivation took place ; in the
" other five, who also recovered, salivation was
" evidently established, *but as is usual,* not till
" the violence of the symptoms had begun to
" abate." " Out of four who were put under
" his care on the second day of the disease, none
" died, but only one was affected with mercury.
" One brought to the hospital on the third day
" of the disease died ; mercury was employed,
" but no salivation took place. One on the
" fourth likewise died, without marks of saliva-

* Out of twenty-seven men newly arrived, twenty-six were attacked with fever, of which twenty-five died in less than two months.

" tion. One on the fifth the salivation was " established, but the disease proved fatal. In " none of the above cases were less than ten " drachms of strong mercurial ointment, and in " most, not less than two ounces were rubbed " into the legs and thighs, with the employment " of all other means which seemed calculated " to promote the expected effect." My own experience in the fevers of the West Indies has fully confirmed the truth of the foregoing observations.

I sailed for Jamaica in the Blanche, of 36 guns, in 1802, strongly prepossessed in favour of mercury; but a service of nearly a year and a half on that station, while it afforded me but too many opportunities of seeing the yellow fever, both at Jamaica and at St. Domingo, served to convince me that I had indeed greatly over-rated its virtues. Without particular reference to the many patients who perished around me in the ships and in the hospital; I may state that four of my most intimate friends died under the use of mercury, one of them, the first lieutenant of the ship, fully salivated; in the others, though taken in sufficient quantity, it produced no obvious effect. In the destructive fever of Walcheren, and in the contagious fevers which prevailed among the prisoners of war at Portsmouth and Chatham, I have given this medicine a fair and

unbiassed trial; but I am certain I shall never again place any dependence on it in the acute stage of fever, but as a purgative.

I took occasion, in the former edition of this work, to observe, that mercury had not succeeded as a prophylactic in the fever of the Mediterranean, which the following observations and case, extracted from Mr. Shand's Medical Journal, while Surgeon of the Ajax, on that station, will fully prove.

"With respect to the constitutions most "predisposed to the disease, I found it at- "tacked the whole indiscriminately; the young "and the old suffered alike. And here I must "relate a circumstance singular in its nature, "and worthy of recollection; a circumstance "unfavourable to the doctrine of mercury "shielding the constitution from the attacks "of fever, when exposed to its exciting cause; "*several* of the severest cases of fever I had "under my care, having been attacked while "their systems were under the influence of "mercury—in a perfect state of ptyalism.

"12th October.—Benjamin Millar, seaman, "ætat 21, made his appearance this evening, "complaining of severe pain in his head and "chest, and indeed different parts of his body, "viz. back, legs, and calves of his legs. There "was much irritability of stomach, with nausea

" and vomiting; in the intervals from sickness, " his pulse was quick and full, his tongue was " white, and belly apparently slow. Although " a young man of excellent constitution, he " suffered severe debility, aggravated, no doubt, " by his being in a state of ptyalism from the " administration of mercury, for the cure of " lues. At the moment of attack, he had an " open ulcer in the groin, from buboes. The " exhibition of mercury was immediately sus- " pended; he was bled to sixteen ounces, and " put to bed.

" 13th. Head-ach still continues, with nausea " and sickness; passed a restless night, pulse " small and quick; had a copious alvine eva- " cuation early this morning; debility, with " prostration of strength, still prevails; blood " drawn last night bore marks of inflammation.

" He was again bled to sixteen ounces, and " a purgative given.

" P. M. Considerably better, every symptom " much mitigated; pulse more regular, with " clean tongue, and open bowels; blood in- " flamed; mouth still very sore; ordered an " antimonial pill at bed-time.

" 14th. No complaint; a complete remission " obtained; feels much stronger and lighter; " pulse calm, tongue clean, skin cool; *mouth*

" *begins to get better.* He was ordered decoc-
" tion of bark three times a day.

" 15th. No complaint; slight weakness only
" remains, more perhaps the consequence of
" the mercury. Appetite improving, tongue
" clean, mouth much less sore."

Sir James Fellowes, at page 300 of his publication on the Fever of Andalusia, gives an account of several cases in which the patients being under the influence of mercury, did not prevent an attack of the disease;* and the same is asserted by Drs. Hunter and Grant, in their respective accounts of the yellow fever in Jamaica.

Whilst I have thus considered it my duty to point out to the young and inexperienced, the slight dependence there should be placed on the specific effect of mercury, in arresting the progress of fever in its early stage; I am bound to declare that in a practice of greater extent than perhaps has fallen to the lot of every one, I have

* Mercury has proved of no use except as a purgative, (says Mr. Vance) and has not acted even as a preventive; as three or four men, who were strongly under its influence for the cure of other diseases, were severally attacked with the fever, one of whom died; and several men who have recovered from the disease, have had their mouths affected, when they had not taken mercury beyond the first dose as a purgative. See Pym on the Bulam, page 125.

never observed the deleterious effects which the imaginations of some have conjured up, as following the use of this medicine. In the more protracted cases, where the acute symptoms have ceased, leaving the appearance of a morbid state of some of the viscera, I feel confidence in recommending to their best attention, a persevering and moderate use of this valuable mineral.

Pediluvium has in general been recommended in fevers where considerable affection of the head prevails, with a view of producing a revulsion; and for this purpose, I have myself employed it: but, for a number of years past, I have laid aside its use at this period, being satisfied from observation, that it generally, in the early stage of fever, increases the symptoms it is intended to relieve; my own experience fully confirming the excellent observation of Dr. Clutterbuck, in his valuable work on fever. In the latter stages of the disease, when the period of excitement is past, I have found it soothing to the patient, and successful in removing the pains in the limbs, often at that time very troublesome. In page 390 of Dr. Clutterbuck's Inquiry, &c. he observes:—"The "effect of the pediluvium, or of warm fomenta- "tions to the extremities, is not merely that of "increasing the circulation in those parts, but "operates forcibly as a stimulus to the brain,

" increases its energy, and in a short time the " vascular action throughout the system, as is " evident by the increase of the heat of the " body, the fulness of the pulse, and the pro- " duction of sweat, which soon follow. It pro- " duces, in fact, as might be expected, conse- " quences the reverse of those which are in- " duced by cold.

" In this point of view, the practice of ap- " plying warm fomentations and the like to " the extremities in fever, seems to be equivo- " cal, and only adapted to that state of things " where a stimulus to the brain is clearly indi- " cated. I have repeatedly seen reason to be- " lieve, when warm fomentations have been " employed early in fever, for the purpose of " relieving a more than ordinary affection of " the head (such as violent delirium), that they " have tended rather to aggravate than miti- " gate a symptom, which owed its origin to " an already too active state of vascular action " in the brain."

GENERAL APPEARANCES ON DISSECTION.

EXTERNAL.

The bodies of such as died during the inflammatory stage of the disease, were in general

more slightly tinged with yellow. The yellow suffusion of those who died at a more advanced period, was found of a deeper hue. A dark livid appearance on the shoulders, and extending upwards to the occiput, was common to all. In several, livid blotches on different parts of the body; in a few, large black lines on the abdomen; the scrotum frequently quite livid. Black or reddish blotches on such parts as had suffered compression were common. In some petechiæ; tense abdomen; in a few, swelling and suppuration of the parotids.

BRAIN.

Vessels generally distended; in many instances completely gorged with blood. The membranes highly inflamed, with often a blood-shotten appearance. Depositions of coagulable lymph in different parts, particularly in the circumvolutions of the brain. Adhesions of the hemispheres were common. The ventricles often distended with fluid, sometimes limpid, at other times yellow. Membranes of the brain frequently yellow. Substance of the brain of a firm consistence.

THORAX.

The lungs often in a high state of inflammation; at other times, effusion had taken place,

and depositions of coagulable lymph on different parts. Adhesions to the pleura costalis were frequent. Pericardium inflamed, and preternatural collection of fluid within that membrane. Diaphragm highly inflamed, with occasional depositions of coagulable lymph on its surface. Effusion to the extent of several ounces in the cavity of the thorax.

ABDOMEN.

Liver generally enlarged, but not commonly shewing great external marks of inflammation; frequently livid towards the lower edge of its concave side.

Gall bladder moderately full of inspissated bile.

Stomach generally more or less inflamed and distended with air, containing a dark coloured matter, adhering at times to its villous coat.

Intestines bearing marks of inflammation through their whole course, distended with air, and containing a matter similar to that found in the stomach; frequent intus-susceptio.

Urinary bladder seldom distended; at times shewing slight marks of inflammation.

CASES OF FEVER,

TREATED UNDER MY CARE,

In the Naval Hospital, Mahon, 1812.

CASE I.

John Partington, a seaman of his majesty's ship, Swiftsure, came under my care in the hospital, 20th October.

Surgeon of the Swiftsure's Case.

John Partington complained, on the 17th, of pain in the head and breast, vomiting, and great prostration of strength; pulse quick and small; heat moderate; tongue pretty clean. Has taken an emetic, and a purgative, and gr: ij calomel every two hours, with some relief.

State of the Patient when received under my care on the 20th.

John Partington, seaman, ætat 34, complains of severe head-ach, soreness and stiffness

of the eyes, which are heavy, have an appearance of anxiety, and are much suffused; the face is a little flushed, but of a dull hue, which extends down the sternum. There is a slight difficulty of inspiration, but no pain; he has nausea and severe vomiting, with much apparent languor: pulse 118, rather small; tongue foul, thirst great, skin dry and generally slightly yellow; temperature 98, body open.

The temporal artery was opened, and thirty ounces of blood taken away; a purgative, composed of submurias: hydrarg: and jalap: pulv: was then given, and he was ordered to take ʒiss julep: ammon: acetat: secunda: q: q: hora.

At 6 P. M. is much the same, except that the face is more flushed; nausea and vomiting continue; pulse now 120, and more full and hard; skin dry and parched, temperature 100.

Detrahantur statim ʒ xvi sanguinis ex arteria temporali.

Vespere. Appearance of the eyes not amended, has much anxiety and restlessness; face is less flushed, and head-ach greatly diminished; his eyes do not now pain him so much. Pulse 120, but smaller.

A blister was applied to the region of the stomach; and as he had had no stool, a purging enema was ordered, and the saline julep, in a state of effervescence, was directed pro re nata.

21st. Has had constant vomiting during the whole night, appears languid, debilitated, and depressed; his countenance has a very anxious appearance, and he complains of slight pain across the forehead. Pulse 116, small and confined, thirst and temperature much the same; had two copious evacuations from the enema; complains of feeling a burning sensation in the stomach, and of something he calls a stoppage, which, from his description of his sensations, appears to be about the cardia.

Habeat misturæ efferves: ℥ ji cum tinct: opii min: x pro re natâ.

Vespere. Appearance of the countenance and eyes worse: says the burning sensation and stoppage are less troublesome; has been constantly vomiting and retching the whole day, and now brings up a matter resembling coffee grounds—draught has not at all relieved him; pulse 110, irregular, and at times scarcely perceptible, skin dry, temperature does not exceed 97.

℞ Carbon: ammon: gr: viii. confect: aromat: q. s. ft. bolus quam sumat: secunda quaque hora suberbibend: haust: sequent: Julep: camphor: ℥ ij.

Habeat vin: rub: tepid: ℥ ij. cum pulv: nuch: moschat: sæpe.

22d. Has had a very restless night, but slept

a little in the morning; his countenance is more languid and depressed; was much troubled with singultus last night, but which, after taking a little of the mulled wine with spice, as well as the vomiting, left him; burning sensation about the stomach still remains, but what he described as a stoppage, is gone. This morning his pulse is 108, fuller, and now regular; skin moist, and temperature 99. Thirst and tongue much the same; he is sometimes incoherent, but answers any question put to him rationally; the matter he has vomited has the same appearance as before.

Contin: medicamenta ut antea, et vinum.

Abradantur capilli et applicetur emplast: lyttæ capiti.

P. M. Countenance much amended, but has still a degree of listlessness and depression; eyes less suffused and more expressive; appeared quite collected in the early part of the day, but at one time in the afternoon was very absent. He has during the day vomited both his wine and medicine, but now retains them, and is at present free from singultus, which has been very distressing. Still continues to vomit as before a matter resembling coffee grounds. Pulse 100, and full. Contin: omnia ut antea.

23d. General appearance improved; vomiting, nausea, and singultus still at times harrassing, and is often brought on by taking a little of any

common drink; is at present however free from these symptoms, but still retains the sensation of burning in his stomach; has had one large and highly fetid stool from an enema, resembling in colour what he vomits. Pulse 86, rather full and hard; skin dry, temperature 98. Thirst and tongue much the same, blister on the head rose well, and was now dressed.

Habeat julep: camphor: ʒ ij tertia quaque hora. Barley water, or tea, for common drink.

Vespere. Continues better. Uneasy sensations in the stomach are again more apparent, and he now also complains of some pain about the superior part of the trachea; he has at times had a little vomiting, and singultus has been troublesome. Pulse 92, rather full, skin dry, temperature 99, tongue a little brown and furred, thirst the same, several scanty stools during the afternoon.

Contin: julep: camphor: et applicetur emplast: lyttæ pectori.

24th. Nearly as last night; has had frequent and harrassing singultus, which is immediately removed on taking a little mulled wine with spice. Has slept a little, no stool, but an inclination in the night to it.

Contin: julep: camphor: et vin: tepid: ut antea.

Vespere. Singultus has been frequent and

strong during the day, and he has still a little disposition to use the bed-pan.

Injiciatur enema purgans statim. Contin: medicamenta et vinum ut antea.

25th. To-day the tunica adnata and skin have put on a more yellow appearance ; says he has had no sleep, and the singultus has seldom left him, but at present it is weaker; uneasy sensations about the stomach still remain. Pulse 104, fuller and harder; has had two stools from last night's injection.

Contin: julep: camphor: et vinum ut antea.

Habeat ol: ricini: ʒ vi. in aq: menth: pip: ℥ ij statim.

Vespere. Had several large motions before his aperient came from the dispensary, which was therefore not given. Has now little singultus, and the vomiting has quite left him. Countenance and other symptoms greatly amended. Contin: omnia ut antea.

26th. Countenance to-day pretty cheerful; says he feels much better, but did not sleep well in the night ; has still a little singultus, but it is much milder. Heat about natural, tongue clean; says he has a little inclination for food.

Habeat julep: salin: ℥ ij tertiis horis.

7 P. M. Is at present asleep, and has slept a good deal during the day. Singultus left him shortly after the morning's visit, and has not

again returned. Has had several copious evacuations by stool; pulse 98, very full, but soft; temperature 100; he is covered with a fine warm perspiration. Burning sensation about the region of the stomach still remains, and he says extends upwards towards the throat.

Repetatur julep: salin: secunda q: q: hora.

Omit the wine.

27th. General appearance continues to amend; but there is still a degree of listlessness, and his cheeks are occasionally flushed; slept well the first part of the night, but towards morning the burning sensation in his throat and stomach prevented him. No return of singultus; pulse 94, and full, with a small degree of hardness; tongue growing clean, and appetite improving; no stool.

Habeat ol: ricini ʒj ex aq: menth: pip: statim.

Contin: julep: salinum ut antea. Took a few spoonfuls of sago.

28th. Greatly improved, several stools from his medicine yesterday, burning sensation nearly gone. Contin: julep: salin: Let him have a little sago for dinner.

29th. Continues to improve rapidly; complains of a sensation of soreness in the region of the stomach, but feels nothing of the burning which has hitherto been so troublesome to him; pulse 86, and soft; temperature and skin natural;

slept well, and has had several stools; appetite good. To have an egg for dinner.

30th. Perfectly convalescent; from this day he took infusion of quassia, was put on half diet, attention was paid to the excretions, and he returned to his duty perfectly well on the 27th of November.

CASE II.

Stephen Stewart, a seaman belonging to the British Tar transport, was taken ill on the morning of the 24th Sept. with shivering, succeeded by severe head-ach, chiefly referred to the forehead. He had some degree of nausea, with pains in his back, and in the calves of his legs, prostration of strength, loss of appetite, and thirst. When I first saw him, it was near 8 P. M. when, together with the foregoing symptoms, his tongue was white and moist on the edges, and brown, dry, and furred in the middle; his eyes were inflamed and watery; head-ach very severe; face flushed; skin hot, but covered with perspiration; and he was greatly impatient of light: his pulse beat 118, full and strong, and there was much increased action in the carotid and temporal arteries. I immediately directed thirty ounces of blood to be taken from the temporal artery, and a brisk cathartic of pulv: jalap: cum

submuriat: hydrarg: to be given. The bleeding gave instant relief.

25th This morning he is much better; his cathartic has operated freely, but there is still considerable excitement present; the pulse, however, is neither so quick or so full as last night, and the temperature reduced.

Detrahantur statim ℥ xxx sanguinis ex arteria temporali: Habeat julep: salin: ℥ ij secundis horis.

1 P M. The whole of the blood could not be procured from the artery, about ten ounces only could be drawn; a vein was opened in the arm, and the remainder taken from thence: he now feels much easier, pulse 95 and full.

7 P. M. Generally better, but pulse still full and strong, and beats nearly 100.

Detrahantur venâ brachiali sanguinis ℥ xx.

26th. Nearly convalescent; pulse scarcely 80, and skin cool, tongue moist and cleaner; says he has now no head-ach or pain in any part, and that he is quite well, with the exception of a little giddiness of head on getting out of bed: only one motion in the night.

Habeat calomel: gr: vi. pulv: jalap: gr: x statim.

P. M. Pulse 84 and still full. No stool during the day.

Habeat ol: ricini: ℥ j ex aq: menth: pip ℥ ij.

27th. Has passed a good night, had several

copious evacuations from his cathartic. Pulse full and strong, and approaching to 90. Face at times a little flushed, tongue white and moist, skin generally cool, and says he has no pain any where of moment.

Repetatur V: S: ad ℥ xii. Contin: julep: salin: ut antea.

P. M. Pulse less full, and of about the same quickness; says he has no complaint whatever, but giddiness of his head, and a little uneasiness about the fore part of it.

Applicetur emplast: lyttæ fronti.

28th. No complaint, but the pain from his blister. Pulse 80, and not full.

Contin: julep: salin: ut antea.

P. M. Pulse now reduced to 70. Skin cool, tongue clean, has no complaint whatever.

29th, 30th. Perfectly convalescent.

Habeat infus: quassiæ ℥ ij tertia quaque hora.

Half diet.

CASE III.

John Parry, (private marine), of the Swiftsure, received into the hospital Oct. 24th.

Surgeon of the Swiftsure's Case.

J. Parry was attacked on the 23d with high pyrexia, pulse quick and strong, pain in the head and eyes, rigors and flushings; tongue dry, no

nausea, purging or stupor; sixteen ounces of blood have been taken away, which induced syncope.

Habeat sulphat: magnesiæ ℥ i.

State when received into the Hospital at 3 P. M.

J. Parry, ætat 33, of a full habit, eyes suffused, and countenance exceedingly anxious; face excessively flushed, swollen, and of a glossy appearance; a little flushing at the top of the sternum, but not extending to the neck. Complains of violent head-ach, which is at times intolerable, and most severe in the course of the longitudinal sinus, and over the orbits; describes his feelings as if the cranium were too full, or too small for its contents. Pulse 110, and strong; temperature 102. Skin dry, tongue white, belly open. Says he was taken ill yesterday about four o'clock, with great heat of skin and thirst, followed by severe head-ach; but does not now recollect any cold chill preceding. Knows no cause for his illness.

Detrahantur statim ℥ xxx sanguinis ex arteria temporali, et habeat postea pulv: jalap: gr: xii. calomel: gr: vi.

6 P. M. Not at all relieved.

Detrahantur iterum ℥ xxx sanguinis.

Half-past 8 P. M. All his complaints remain,

except that his eyes are not so painful; pulse, heat, thirst, flushing, and swollen appearance of the face nearly the same.

Detrahantur iterum ℥ xxx sanguinis ex arteria temporali.

Habeat pulv: antimon: submuriat: hydrarg: āā gr: ij.

25th. Passed a tolerable night, but slept little; countenance much less languid and anxious, eyes lively, and not at all expressive of distress. Flushing of the face, as well as heat, swelling, and glossy appearance, entirely gone; says he is quite free from pain, and has been so ever since the last bleeding: several free evacuations; pulse 70, soft and regular, tongue clean, no thirst, appetite bad.

Capiat ℥ij julep: aq: ammon: acetat: secundis horis.

Vespere. A little increase of temperature and quickness of pulse, with flushings, and stiffness of the eyes: twelve ounces of blood taken from the temporal artery instantly relieved him.

26th. Passed a comfortable night, countenance much amended; flushing and glossy appearance of the face perfectly gone, as well as suffusion of the eyes; says he has been free from complaint all night. Pulse calm, temperature 98: tongue rather white, thirst abated, appetite bad: has had two copious evacuations.

Habeat julep: aq: ammon: acetat: ut antea.

P. M. Greatly amended ; is now quite free from fever : functions natural.

27th. Convalescent. He was kept on reduced diet, without wine, for a few days ; after which he took infusion of quassia, and was soon discharged.

CASE IV.

Jas. Tucker, purser's steward of the Swiftsure, received into the hospital Oct. 24th.

Surgeon of the Swiftsure's Case.

Oct. 22. Moderate pyrexia, pain in the head, back, and limbs ; purging and griping ; pulse frequent, tongue clean.

Habeat calomel: gr: vi. pulv: rhei: ʒ i.

P. M. Pyrexia very high, pulse strong and rapid ; heat great, tongue dry ; pain in the head and loins ; no griping, but is slightly purged.

V: S: ad ℥ xxxv. habeat calomel: gr: vi.

23d. Pyrexia abated, pulse frequent and weak, and he perspires : tongue dry and dark ; pain chiefly in the breast and loins ; vomits frequently, but is not purged.

Habeat calomel: gr: iv. pulv: jalap: ʒ j.

P. M. Not purged.

Repetatur calomel: cum jalap: ʒ ss.

24th. Better; pain only in the back; gently purged, slight retching continually; tongue cleaner, pulse quick and weak.

Habeat calomel: gr: iv pulv: jalap: ʒ ss.

State when received under my Care in the Hospital, 24th Oct.

Joseph Tucker, purser's steward, ætat 32, of a robust make, and extremely corpulent habit; countenance marked with great anxiety and languor; eyes watery, roll quick, and have a heavy dull appearance: considerable flushing of the face, but not of the active kind; rather swollen, with a shining appearance. Complains of a severe, acute, and constant pain across the inferior part of the breast, and about the epigastric region, which so much affects his breathing and speech, that he performs neither but with great difficulty and suffering; great prostration of strength; breathing extremely short, catching, laborious, and performed with considerable effort of the respiratory muscles. Pulse about 140, and very small. Skin dry; temperature 99; tongue white, thirst great, belly loose.

Habeat julep: aq: ammon: acetat: ℥ij secundis horis. Admoveantur regioni epigastricæ hirudines xii.

P. M. Says the pain in the breast is much re-

lieved, since the application of the leeches, but appears otherwise much the same.

25th. Has slept about three hours this morning; appearance of the countenance and eyes rather better than last night, but there is still great anxiety, and he is very restless: eyes less watery, flushing of the face nearly gone, as is also the swelling. Says to-day he has no pain whatever; catching and laboriousness of breathing greatly diminished. Pulse 118, and small: skin moist; temperature 99: tongue foul, thirst less. Three motions in the night.

Contin: julep: aq: ammon: acetat: ut antea.

P. M. Symptoms continue better; several evacuations; pulse 104, and fuller.

26th. The eyes this morning begin to assume a yellow hue, but suffusion is quite gone: passed a good night; and the general appearance of the countenance is pretty cheerful; is somewhat restless, but to-day complains chiefly of weakness. Pulse 100, rather full, but soft; tongue cleaner, thirst diminished, skin dry; temperature 100; several stools, no appetite.

Contin: julep: aq: ammon: acetat: ut antea.

P. M. Countenance much more anxious and listless than in the morning; moans a great deal; his breathing is again hurried, and performed with great effort of the respiratory muscles; and he is extremely restless and impatient: says

he feels considerable pain in his breast on a full inspiration; pulse 104, pretty full, but soft. Skin rather moist, temperature 101; tongue in the middle covered with a brown fur: thirst and appetite much the same; three or four stools.

Detrahantur statim e brachio sang: ℥ x.

27th. Says he slept four or five hours in the night, and that he has rested more comfortably than since he has been in the hospital. Countenance has rather a less anxious appearance, and he is not so impatient; eyes a little heavy, but not much suffused; *the eyes and skin are of a bright yellow appearance;* respiration still performed with labour, and considerable effort of the respiratory muscles: he moans less, and says he has been quite free from pain since the bleeding last night. Pulse 96, soft, and easily compressed; temperature 98. Skin moist, thirst not so great; tongue brown and chapped; one stool.

Contin: julep: aq: ammon: acetat: ut antea; et habeat gr: ij submuriat: hydrarg: bis in die.

P. M. Countenance anxious, and expressive of great distress; eyes suffused and heavy: respiration extremely laborious, and still performed with excessive effort of the respiratory muscles; very restless and tossing about in bed: moans much, and speaks incoherently, nor does he

answer any questions put to him: extremities are become cold, and the pulse imperceptible. I saw Tucker at four o'clock, when he continued in the same state as the morning report mentions; shortly after I left him, he became more restless and uneasy: about five his breathing appeared very laborious, and his contenance anxious and depressed; a little before this time he awakened from a disturbed sleep in a fright.

Powerful stimuli, both permanent and diffusible were had recourse to; fomentations applied to the whole body with heated tiles, and bottles containing warm water to different parts, and to the region of the stomach; but our efforts were unavailing; the symptoms increased, and he expired at 10 P.M.

His Body next Morning exhibited the following Appearances on Dissection.

EXTERNAL.

The body generally of a bright yellow colour, and towards the nape of the neck and shoulders slightly livid.

On removing the scull-cap, the vessels of the dura mater were found exceedingly turgid, shewing strong marks of inflammation; a little aqueous fluid betwixt the cranium and surface

of the dura mater. The internal surface of that membrane highly inflamed. The vessels of the pia mater, even to the most minute branches, literally gorged with blood; very considerable depositions of coagulable lymph between the tunica arachnoidea and pia mater. The falx in the highest possible state of inflammation, perfectly blood-shotten, and the hemispheres adhering to it at its posterior part. Ventricles greatly distended with fluid. Vessels of the tentorium very turgid, and exhibiting strong marks of inflammation; on removing the tentorium, vessels on the surface of the cerebellum very turgid, and gorged with blood, with considerable effusion of coagulable lymph; the dura mater lining the base of the cranium, shewing the highest possible appearance of inflammation.

THORAX.

Lungs in a high state of inflammation, with great effusion of coagulable lymph on their surface; pericardium greatly inflamed, and also the left ventricle of the heart; with a deposition of coagulable lymph on the left auricle. Diaphragm in a very high state of inflammation, as well as the pleura costalis, with depositions of coagulable lymph on their surface.

ABDOMEN.

Liver much enlarged, of a gray irregular appearance, and shewing strong marks of inflammation. Stomach highly inflamed, particularly towards its cardiac orifice, and in many parts covered with a layer of chocolate coloured gelatinous matter; gall bladder containing a moderate quantity of a dark coloured bile of an inspissated consistence, with a few biliary calculi. Intestines, in some parts, had slight marks of inflammation, distended with flatus, and containing a matter resembling that found in the stomach.

CASE V.

Thomas Tonge, seaman of his Majesty's ship Ocean, at present has been doing duty in one of the cattle ships; was received into the hospital in the afternoon of the 19th of October; ætat 25, of a full habit; has some languor of countenance, with considerable anxiety and inattention, eyes a little staring and suffused; complains of severe pain across the forehead, with some soreness of the eyes, slight pain of the breast, and severe pain in the upper part of the umbilical region, which is considerably affected by a full inspiration: has a short cough, with-

out expectoration; face greatly flushed, and somewhat swollen, with a shining appearance; ideas a little confused, and answers quick; pulse 118, hard, and somewhat contracted; skin dry; temperature 105; tongue a little foul; great thirst, no appetite, a stool to-day. Says he was seized yesterday with head-ach, succeeded by cold shiverings, increased heat, pain in the bowels, &c. Has taken no medicine; knows no cause for his illness.

Detrahantur statim ℥ xxx sanguinis ex arteria temporali et habeat pulv: jalap: gr: xii submuriat: hydrarg: gr: iv statim.

℞ Julep: aq: ammon: acetat: ℥ viii. sumat ℥ ij secundis horis.

Vespere. Pain of the breast and bowels greatly diminished, and somewhat less flushing since the bleeding; ideas now more composed, and answers less quick; pulse 110, fuller, but softer. At 11 P. M. face again more flushed; pulse fuller, stronger, and more frequent.

Detrahantur sanguinis ℥ xx ut antea.

20th. Appearance of the countenance and eyes amended, but still considerable anxiety, languor, and inattention; the eyes are suffused, but there is less flushing of the face, which yet retains a shining appearance. Flushing nearly disappeared after the last bleeding, and since that he has been free from head-ach; has a little

pain in the breast upon inspiration; slight cough, and uneasiness of the bowels remain; has some soreness and stiffness of the eyes; is restless, and answers questions very quickly; pulse rather irregular, small, and beats 130 in the minute; skin dry; temperature 104; thirst great, several stools, respiration rather quick.

Contin: julep: aq: ammon: acetat: ut antea.
V: S: ad ℥ xx statim.

After the bleeding he was put into the warm bath, and a blister of a foot square applied to the epigastric region.

At 12 A. M. he is considerably easier; his pulse now 120, and regular.

P. M. Countenance still expressive of distress; flushing of the face diminished, but remains still about the sternum; says he is much easier; pulse 112, rather feeble, tongue foul, skin cooler; has a good deal of thirst.

Abradantur capilli et applicetur emplast: epispast: capiti.

21st. Passed a restless night; countenance still very expressive of distress; eyes dim and unmeaning; face a little flushed, which extends down the neck. Says he has no pain but from the blisters; has a little strangury. Pulse 108, temperature 99; skin moist, tongue furred, considerable thirst, belly open.

Contin: julep: aq: ammon: acetat: ut antea.

Bibat ad libitum infus: sem: lini.

P. M. Much as in the morning, but has been a good deal purged during the day; and, as he would not use the bed-pan, has two or three times nearly fainted on getting out of bed.

Admoveantur fotus abdomini.

22d. A bad night; eyes and countenance look wild, with a kind of dejection. Has been restless, and is constantly tossing from side to side of the bed; speaks incoherently, respiration quick, and somewhat laborious; pulse 130, confined, and rather hard; skin dry, temperature 101; thirst and tongue much the same.

Contin: julep: aq: ammon: acetat: ut antea.

Repetatur V: S: ad ℥ xii.

Vespere. Much as in the morning; still very restless, and speaks incoherently; respiration laborious and quick, pulse 112, small, and contracted; tongue cleaner, skin dry; no stool to-day.

Applicetur emplast: epispast: fronti: repetatur V: S: ad ℥ xii.

Injiciatur enema emolliens statim.

23d. Has passed a very bad night, with constant delirium; countenance impatient, anxious, and wild; speaks incoherently, and hardly answers any question put to him; respiration seems rather more free than at last report; complains of nothing, yet appears to suffer greatly;

pulse 120, rather fuller, temperature 100; tongue foul, does not complain of thirst, but drinks when it is offered to him; had several stools in the night.

Contin: julep: ammon: acetat: ut antea.

He continued in this state during the forenoon, and suddenly expired at 2 P. M.

Note. This man had been greatly intoxicated the day preceding that on which he was taken ill.

Appearances on Dissection Sixteen Hours after Death.

On removing the skull-cap, the vessels on the surface of the dura mater exceedingly turgid; on raising the dura mater, vessels of the pia mater, even to their most minute branches, completely injected with blood; the internal surface of the dura mater highly inflamed; particularly in the course of the longitudinal sinus; the falx in the highest possible state of inflammation, and adhering firmly to the right hemisphere; vessels in the medullary substance very turgid.

On cutting into the ventricles, vessels very turgid; substance of the brain, generally of a very firm consistence. The tentorium, in the highest state of inflammation, and all its vessels most minutely injected; vessels on the surface of the cerebellum, very turgid; that part of the dura

mater, lining the base of the cranium, highly inflamed: about one ounce of serum was found in the base, after removing the whole of the brain. To sum up the whole, there is not a part of the contents of the cranium which does not exhibit the most decided marks of inflammation.

THORAX.

Lungs highly inflamed, and coagulable lymph, in considerable quantities, thrown out on the posterior surface of the left lobe. In the right cavity, about three ounces of serum were found; and about half that quantity in the left. Vessels of the diaphragm very turgid, and that organ generally much inflamed.

ABDOMEN.

Stomach empty, and exhibiting no marks of inflammation. Spleen rather large. Liver and gall bladder in their natural state: inferior parts of the ileon highly inflamed.

CASE VI.

Nov. 1st. John Burton, (marine), aged about 16, of a stout make, and full habit: appearance of the countenance languid and inattentive, with a considerable degree of restlessness and anxiety;

eyes very much suffused, heavy and dull; eyes and eyelids rather swollen; is very drowsy.

Complains of nothing but great pain in the right temple, and debility: respiration does not seem impeded. Pulse 110, full and hard; skin dry, temperature 102; tongue foul, and of a grayish colour, some thirst, no appetite: belly costive. Was taken ill about two in the morning with violent cold shiverings, quickly succeeded by pain in the head, increased heat and perspiration: the head-ach is now more severe; has had no sickness at the stomach.

Detrahantur sanguinis ex arteria temporali ℥ xxx.

Habeat pil: jalap: cum submuriat: hydrarg:

6 P. M. Face more flushed and swollen, eyes more full and suffused; pulse 112 and full.

Detrahantur sanguinis: ℥ xxx ut antea.

Repetantur pil: ut antea.

2d. Slept tolerably well; appearance amended, face still much flushed and swollen, head-ach remains. Pulse 100, rather full and hard; skin dry, temperature 99: tongue and thirst much the same.

Detrahantur sanguinis: ℥ xx ut antea.

Habeat misturæ catharticæ ℥ iv. statim.

P. M. Has slept a good deal in the day; restlessness and irritability nearly gone. Skin dry; temperature 103, pulse 100; several stools.

Perfundatur: corpus: aqua frigida.

3d. Appearance of the countenance and eyes to-day nearly natural; has still some flushing of the cheeks. Says he has no complaint but slight debility; did not rest well, but perspired after the bath. Pulse 90; temperature 99; no thirst, several stools.

Habeat julep: aq: ammon: acetat: ʒij secundis horis.

P. M. Pulse 86; temperature 88; feels quite comfortable.

4th. Perfectly convalescent.

CASE VII.

Oct. 1st. Thomas Ryan, (seaman), ætat 20.

Complains of head-ach, general pains in his limbs, and lower part of the abdomen, which is greatly increased on pressure; eyes a little suffused, and some depression of countenance: pulse 100, and full; skin hot, tongue parched and slightly foul, with bad taste; belly costive. Says he was taken ill about ten days ago, but forgets how: has had no medicine.

Venæ: sectio: ad ʒ xx.

Habeat haust: aperientem statim:

Vespere, Baln: tepid:

℞. Mistur: salinæ ʒij; sumat: secund: quaque hora.

2d. Countenance more expressive; complains of nothing but weakness; pulse 80, and soft; skin moist, tongue less dry; has had four copious stools.

Continuetur mistur: salin: ut antea.

P. M. Countenance very anxious, and expressive of considerable suffering; eyes suffused and dull; has pain in the epigastric region, but no where else; respiration hurried, and the action of the respiratory muscles a little increased: pulse 100, full and soft; skin warm, and covered with sweat; tongue dry, but cleaner; much thirst: has had several stools.

Repetatur V: S: ad ℥ x.

Continuetur mistur: salin: ut antea.

Admoveatur emplastrum cantharidis regioni epigastricæ.

3d. Slept well in the night; anxiety of countenance, suffusion and dulness of the eyes nearly gone; has no pain; pulse 84, and soft: skin rather warm, but moist; tongue cleaner, thirst still considerable; has had two stools.

Habeat julep: aq: ammon: acetat: ℥ ij secund: q: q: hora.

P. M. All his symptoms better, countenance very cheerful; pulse 84. Skin cool and moist; has had several stools.

Contin: julep: ut antea.

4th. Has no complaint, but weakness; coun-

tenance cheerful; pulse 86; skin cool; two stools.

Contin: julep: ut antea.

P. M. Seems worse, countenance more languid, and a little depressed; complains much of soreness and dryness of his tongue; pulse 114, very full; skin extremely warm, and covered with a profuse sweat: several stools.

Balneum tepid: statim.

Contin: julep: aq: ammon: acetat: ut antea.

5th. Greatly better, pulse 94, soft and full; skin cool, belly open.

Contin: julep: ut antea.

P. M. Much as in the morning, but pulse rather quicker, and countenance, if any thing, more languid; skin warm, but drenched with moisture.

6th. As yesterday.

Contin: julep: ut antea.

P. M. Pulse 112, full and rather hard; skin warm and dry.

7th. Slept the whole of the night, and appears greatly better, pulse 92; perspires much, thirst less, tongue better; no stool. Being absent this day, the following medicine was ordered by the surgeon for him:

Misturæ salinæ ℔i.

Vin: antimon: ʒ iſs, confect: aromat: ʒj.

M. Sumat: cochlear: iij secundis horis.

P. M. Has slept much in the day, but complains of great debility, has no pain; eyes and countenance dull and languid; pulse 100, tongue dry, temperature 100.

Add: dos: vespertin: tinc: opii: min: xxv.

8th. Has slept the whole of the night, but his eyes are more dull and inexpressive, and countenance more depressed. The mixture of yesterday was repeated. When I visited him about mid-day his countenance had become still more alarming, and eyes inexpressive; his breathing very difficult and stertorous; his pulse had fallen to 90, and was very feeble.

Prætermittatur mistura antimonialis.

Habeat julep: camphor: ʒ ij secundis horis.

At 6 P. M. his general appearance much better, he had slept a little, and his breathing was free from stertor; his pulse rose to 108, and was fuller; temperature 102; two stools.

Vespere. Continues better.

Prætermittatur julep: camphor:

Habeat julep: aq: ammon: acetat: ut antea.

9th. Still complains of debility, but the appearance of his countenance is much amended, and he speaks now with greater energy; pulse 90, soft and rather weak; temperature 90; several stools; has some cough.

Contin: julep: aq: ammon: acetat: ut antea.

Let him have a little sago for dinner.

9th P.M. Much as in the morning.

Contin: med: ut antea.

10th. Continues to improve; still complains of weakness, pulse 100; skin moist, temperature 99.

Contin: julep: ut antea.

From this time he daily amended; in the course of his convalescence, he had, at times, a troublesome cough, which was removed by the use of various pectoral medicines: he had also, for some time, profuse night sweats, which were also removed by tonics; and he was perfectly strong and well in the latter end of December.

Note. This patient had formerly belonged to a transport, but having quarrelled with his master, he left the ship and concealed himself on shore, where he was taken ill.

CASE VIII.

Oct. 28th. John Mills, seaman of the Gorgon, ætat 35, of a stout robust make, and rather a full habit, complained about ten at night. Countenance has considerable anxiety, impatience and languor, with inattention to surrounding objects; eyelids are much swollen, and have an œdematous appearance; eyes greatly suffused, heavy, and dull, and his cheeks have a vivid flush.

Complains of severe cutting pain in the epi-

gastric region, in both temples, and across the eye-brows; soreness of the eyes, pains of the loins and legs, respiration rather hurried, anxious and deep; pulse 96, and full; skin very moist, tongue foul, belly open. Says, that about two hours ago, he was taken with slight cold shivering, to which suddenly succeeded the pain in the epigastric region, (also vertigo and dimness of sight, which are now gone); pain in the temples, loins, and legs, with profuse sweating over all the body; has been employed in the hold, and says he felt unwell for some days past; knows no cause of his complaint, nor has he taken any medicine. Is a very irregular liver, with respect to drinking.

Detrahantur statim ℥ xxx sanguinis ex arteria temporali.

Habeat pil: jalap: cum calomel: statim.

29th. Anxiety, impatience, and languor in the countenance somewhat amended; eyes still much swollen and suffused, and have a dull heavy appearance; flushing of the face less, but yet considerable. Pain at the stomach and of the head gone; the other symptoms are also much diminished since the bleeding: respiration not so hurried, anxious, or deep; pulse 94, and full; skin dry, temperature 100; tongue white, with a tremulous motion, some thirst, no appetite; has had two stools.

Detrahantur ℥ xx sanguinis ut antea.

Habeat misturæ catharticæ ℥ vi.

Vespere. Medicine has operated very freely; all his symptoms are greatly better, but more particularly the irritable impatient anxiety of countenance, which now appears somewhat cheerful; the eyes are less swollen and suffused; pulse 74, still a little full; temperature 102, thirst and tongue nearly as in the morning.

Detrahantur ℥ xx sanguinis ut antea.

30th. General appearance of the countenance and eyes about natural; cheeks still a little flushed; slept well, pulse 68; skin natural; tongue white, with a little tremulous motion; no thirst; several stools in the night, and has some appetite.

Repetantur pil: jalap: cum calomel: ut antea.

Vespere. General appearance much as in the morning. Functions natural; tremulous motion of the tongue nearly gone.

31st. Convalescent; has had several stools, and his appetite is good.

Nov. 1. A great degree of irritability, with some anxiety and languor in the countenance; eyes slightly suffused and inexpressive; cheeks a little flushed. The part of the head, at which the artery was opened, is swelled

and inflamed. Says he has no pain but where the swelling and inflammation are; respiration is hurried, which seems to arise from the irritable state in which he is. In the middle watch, as well as this morning, had cold shiverings; at present is in a profuse perspiration; pulse 100, full and hard, temperature 102; has rather been purged since last report: tongue white, thirst considerable, no appetite.

Detrahantur ℥ xvi sanguinis ex arteria temporali.

Repetantur pil: jalap: cum calomel.

Vespere. General appearance much as in the morning; says he is free from pain; respiration more natural. Pulse 116, rather small, tongue pretty clean; temperature 103, skin moist, thirst less. Has had six or seven stools in the course of the day.

V: S: ad ℥ xvi.

2nd. General appearance of the countenance and eyes amended, irritable appearance gone, and the cheeks less flushed.

The part of the head where the temporal artery was opened, is more swelled, particularly about the eye; respiration free and calm. Pulse 98, rather hard and full: skin dry, temperature 101. Tongue still foul, belly open; has some appetite.

Habeat ʒ ij julep: aq: ammon: acetat: tertiis horis.

Vespere. Generally better; flushing of the cheeks nearly gone; swelling about the eye and temple, if any thing, increased. Pulse 90, skin dry, temperature 100, tongue clean.

Admoveantur hirudines vi. temporibus ægri.

3d. Has no complaint except the swelling of the temple, which is greatly diminished; and, independent of this, appears quite well. The temple was from this time covered with cloths wetted with a solution of cerussa acetat: and he soon returned to his ship.

CASE IX.

Mark Shipley, seaman of the Swiftsure, admitted into the hospital October 24.

Surgeon of the Swiftsure's Case.

Oct. 18. P. M. Mark Shipley was seized with rigors, succeeded by moderate pyrexia; pain in the head and knees, skin hot, pulse quick and soft, bowels and stomach natural; some thirst, tongue clean.

Hap: sulph: magnesia ʒ j.

19th. Purged; pyrexia moderate; pain in the head and loins, tongue whitish.

Capt: antimon: tartarziat: gr: ß:.

Nitras potassæ gr: iv.

In the middle of the day vomited a live worm, eight inches long.

P. M. Great pain in the stomach; vertigo approaching to syncope; nausea.

Cap: calomel: gr: vi.

20th. Gnawing pain in the stomach; vertigo and prostration of strength; pulse frequent and small; tongue clean; purged.

Cap: calomel: gr: ij secunda q: q: hora.

P. M. Tongue rather foul; pyrexia increased.

Repetantur medicamenta.

21st. Pyrexia moderate, pulse frequent, skin cool. No nausea, purging, or stupor. Contin:

22d. Better; gums slightly affected, pyrexia slight; feels some appetite. Repetantur medicamenta.

P. M. Exacerbation, pain in the sinciput and scrobiculus cordis; no ptyalism.

V: S: ad ʒ xxx. Repetatur sulph: magnes: ʒ j ut antea.

23d. Better, less pain in the head, but has soreness of stomach; gently purged; pulse moderate and soft, skin and tongue natural.

Prætermittantur medicamenta.

24th. Pulse quick, and weak; pain in the occiput and limbs; tongue white, no nausea, scabby eruption about the mouth and nose.

Cap: calomel: gr: iv.

State when received into the Hospital.

24th. Ætat 46, of a spare habit, countenance very anxious and languid, eyes dull and inexpressive, face greatly flushed, and of a glossy appearance, which extends down towards the top of the sternum. Vessels of the eyes rather full, and the eyes themselves watery. Complains of very severe pain of the head, especially over the orbits, and in the course of the longitudinal sinus, considerable vertigo, and intolerance of light; pulse 100, temperature 99. Skin moist, tongue white, thirst urgent; no appetite; one stool to-day.

Habeat pil: jalap: cum calomel.

Sumat: julep: aq: ammon: acetat: ℥ ij secunda q: q: hora.

Vespere. General appearance as before, and complaints remain the same; pulse 104, and full; temperature 100, skin dry.

Detrahantur ex arteria temporali sanguinis ℥ xx

25th. Passed an indifferent night, but his countenance is less anxious, and eyes more lively; flushing and glossy appearance of the face nearly gone; head-ach and vertigo greatly diminished since the bleeding, and both are now very slight; light more tolerable to the eyes;

pulse 76, temperature 98, tongue cleaner, thirst less, skin dry; two stools in the night.

Continuetur julep: aq: ammon: acetat: ut antea.

Vespere. Free from pain, appearance much amended, pulse 76, tongue clean, appetite improved; a good deal of thirst, skin cool, two stools.

Habeat calomel: et pulv: antimon. āā gr: ij statim.

26th. Passed a good night, countenance and eyes much amended; face and neck free from pain, but complains of a little cough; functions restored to the natural state.

Repetantur julep: aq: ammon: acetat: ut antea et pil: calomel: cum jalap.

27th. No stool; otherwise much as last report.

℞. Ol: ricini ℥j aq: m: pip: ℥ij: sumat: statim.

28th. Two evacuations from his medicine; cough better.

Repetatur julep: ut antea.

Vespere. Quite convalescent.

29th. Continues well.

Repetantur pil: jalap: et calomel.

30th. Put on half diet, allowed wine and water.

Nov. 1st. Complains of slight head-ach, but the functions are in their natural state.

Applicetur emplastrum cantharidis inter scapulas.

2nd. Blister rose well, but the head-ach continues.

3d. Vespere. Countenance anxious, restless, and a little depressed; eyes heavy, dull, and rather suffused; complains of severe pain across the forehead, dimness of sight, tinnitus of the left ear, and great vertigo, especially in the erect posture. Pulse 102, and full; skin moist, temperature 100, thirst urgent, one stool in the day.

This morning, about eight o'clock, was seized with head-ach and cold shivering. The first still continues, and the latter remained till mid-day, which was followed by increased heat, and there is now a slight sweat about the neck.

The night of the second the pulse was 90, and full; skin dry, temperature 99, face a little flushed, and for the last two days the eyes were a little dull and heavy. The half-diet and wine to be discontinued.

Abradantur capilli. Admoveatur vesicatorium fronti.

Detrahantur ex arter: tempor: sang: ℥ xvi statim.

4th. Countenance amended; pain of the head gone; but tinnitus, though less in degree, still remains; blister rose well, pulse 84, and soft; skin natural, little thirst, has had one stool, complains of a little strangury.

Injiciatur enema commun: statim.

Let him drink plentifully of linseed tea.

Foveatur abdomen.

P. M. At three this morning had another cold shivering (which lasted about two hours), succeeded by a hot stage, but this has not been followed by a sweat; had two stools from the enema; pain of the bowels gone: otherwise is much as in the morning.

5th. Generally amended, but has still considerable tinnitus. Had a slight paroxysm to-day, which lasted about an hour; has some difficulty in making water; complains a good deal of weakness, and is emaciated.

Injiciatur enema: ut antea.

Sumat: julep: salini ʒ ij secunda q: q: hora.

6th. Has had no paroxysm to-day. Contin: julep: Tinnitus much the same.

7th. Had a very slight fit to-day; tinnitus remains; general appearance on the whole improves, but there is still a little stupor, and dulness of the eyes.

Habeat gr: ijſs pil: hydrarg: mane et vespere.

8th. 9th. 10th. 11th. General appearance much improved, and the tinnitus greatly lessened. Has had no paroxysm since last report, but has now and then complained of head-ach, which at present is but slight. Pulse 80, temperature 99, tongue rather white, no thirst, appetite very good, belly regular. From this time little change took place, occasional laxatives were given, he continued the use of mercury in small doses, his diet was augmented, and he rapidly recovered.

CASE X.

John Smith, seaman of his Majesty's ship Swiftsure, admitted into the hospital October the 24th.

Surgeon of the Swiftsure's Case.

Oct. 23d. Pyrexia, pulse frequent, hard and strong, skin ardent, tongue natural, pain in the back; no nausea, stupor, or purging.

Mitt: sang: ℥ xii.

Syncope induced.

Cap: calomel: gr: iv.

State when admitted into the Hospital.

Ætat 22, very stout make, and full habit; much languor and anxiety in the countenance, with considerable vacancy and inattention; eyes suffused, heavy and dull; face greatly flushed and swollen, having a glossy appearance. Complains of severe pain in the forehead, and generally in every part of his body. Considerable prostration of strength, breathing anxious and laborious, but says he has no pain in the breast, and inspires freely. Pulse 90, full and hard; skin dry, temperature 101; tongue white, thirst considerable, belly open.

Detrahantur ex arter: tempor: sanguinis ʒ xxx.

Habeat pil: jalap: cum calomel.

Julep: aq: ammon: acetat: ʒ ij secunda q: q: hora.

25th. Languor, anxiety, and inattention little diminished, eyes less suffused, flushing and swelling of the face somewhat reduced, and the head-ach is much better since the bleeding; he complains of great pain, and soreness of every part of his body, to the very extremities of his fingers and toes, as he expresses it; has considerable nausea and some vomiting, which he

says troubled him much in the night; moans greatly on inspiration, and is extremely restless; seems rather acute in his perceptions and answers. Pulse 128, small and hard: skin dry, temperature 102. Tongue has a grayish colour, thirst urgent, complains much of a soreness about the superior part of the abdomen.

Admoveantur regioni epigastricæ hirudines xii.

Contr: julep: aq: ammon: acetat:

Vespere. Anxiety, with irritability of countenance rather increased, languor and inattention less. Complains of most severe and acute pain in the epigrastic and umbilical regions. Other symptoms nearly as in the morning; stools rather scanty.

Detrahantur ex arter: tempor: sanguinis ℥ xvi.

Repetantur pil: jalap: cum calomel:

Foveatur abdomen.

26th. Anxiety of countenance somewhat less; but irritability remains nearly the same; suffusion of the eyes decreased; in other respects is much as before; the whole body is *of a bright yellow colour*. Says the general soreness is much relieved since the bleeding, as is also the pain in the epigastric and umbilical regions; there is still a good deal of the last remaining, and he has great nausea, and some-

times a little vomiting of a dark coloured matter, mixed with blood. He has now no headach, but considerable vertigo; is extremely restless, and moans greatly: the face is still a little flushed, but the swelling and glossy appearance are nearly gone. Pulse 100, weak, and soft, temperature 99½; tongue grayish and furred, thirst less; no stool, but has slight tenesmus.

Habeat misturam effervescentem, quæ repetatur pro re nata.

Vespere. General appearance better, anxiety and irritability less; the face, however, is rather more flushed; pain in the umbilical and epigastric regions gone, as is also the moaning on inspiration; has vomited his draught at times through the day, but has now neither nausea or vomiting, vertigo much diminished. Pulse 90, full and soft; skin moist, temperature 99½; tongue cleaner.

Repetatur haustus ut antea.

27th. Appearance improved; yet the face is still flushed, vertigo less, soreness of the body gone; has been greatly harassed this morning with nausea and vomiting. Pulse 98, and full, skin dry, temperature 99; tongue and thirst much the same; no stool.

Contin: mistura effervescens.

Habeat pil: calomel: et jalap: ut antea.

28th. Continues to improve a little; anxiety much less, irritability and impatience considerably diminished; flushing of the face less evident. No return of pain or uneasiness in the umbilical or epigastric regions; complains, at times, of slight nausea, but has not vomited during the night; took an effervescing draught this morning, which he immediately rejected, but felt much relieved of his nausea. Pulse 92, soft; skin dry, temperature 100: thirst urgent, tongue foul, but moist; no stool.

Injiciatur enema purgans statim.

Repetatur haustus et pil: jalap: cum calomel:

Vespere. General appearance as in the morning; has had two copious and fetid stools, and frequent returns of nausea during the day, but was always relieved after taking an effervescing draught: complains still of vertigo. Pulse 94, rather full but soft, temperature $98\frac{1}{2}$; tongue cleaner, no appetite; senses still acute.

Admoveantur emplastra vesicatoria temporibus.

29th. Anxiety and irritability of countenance less, but there is more languor, with some drowsiness; restlessness nearly gone; slept a little in the night, vertigo and nausea are rather less; cheeks a little flushed, skin of a deep

yellow, and has been gradually becoming so. Pulse 80, and full, skin dry, temperature 99; tongue brown, dry, and furred; thirst not diminished; some cough, no stool.

Contin: haustus.

Ol: ricini: ℥ j aq: M: pip: ℥ ij statim sumend:

Injiciatur enema ut antea pro re nata.

Vespere. Several stools from the medicine, but an enema was previously thrown up: languor and drowsiness much less, and the general appearance of his countenance amended. Vertigo and nausea diminished; senses not so acute. Pulse 84, full, and soft; skin dry, temperature 99; tongue and thirst, much the same.

30th. Continues better; still some flushing of the cheeks; vertigo and nausea gone. Pulse 78, full and soft; tongue and thirst nearly the same; has been much purged in the night.

Contin: haustus.

Vespere. Has remained very easy during the day, and seems considerably better.

31st. Much as last report, but if any thing improved. Pulse 74; skin moist, temperature 98: more thirst, tongue still covered with a brown fur; has a desire to eat; had three stools.

Contin: haustus.

Vespere. Continues better; skin still becoming more yellow; has had two stools.

Nov. 1st. Is not quite so well to-day; has considerable vertigo and nausea, with some vomiting; no pain, but complains of debility. Pulse 99, full, and rather bounding; skin dry, temperature 98. Thirst much as before; no appetite; has had three stools.

Contin: haustus

℞ Pil hydrarg: gr: iv. pulv: jalap: gr: vi. conservi rosæ q: s: ut ft: bolus h: s: sumendus.

2d. Greatly amended, and though he has been frequently to stool, slept much better than the preceding night. Vertigo and nausea nearly gone. Pulse 84, skin dry, temperature $88\frac{1}{2}$; tongue cleaner; has still some thirst.

Contin: omnia ut antea.

3d. Much better; vertigo and nausea quite gone, and he is in fact perfectly convalescent.

Habeat infus: quassiæ ʒ viii in die.

Contin: pil: hydrarg: cum pulv: jalap:

The infusion and pills were continued: from this time no change of moment took place, and before the end of the month he was entirely recovered.

CASE XI.

Charles Goodall, seaman, of his majesty's ship, Swiftsure, admitted 20th October.

Surgeon's Case.

Ætat 34. Oct. 16. Complains of general high pyrexia, great tremor, and prostration of strength; pulse small and very quick; tongue white; pain in the head, with cough and coryza.

Cap: sulph: magnes: ℥ j.

P. M. Purged copiously.

Cap. pulv. antimon: gr. vi.

17th. Pyrexia rather abated.

Repetatur pulv: antimon:

P. M. Purged much; pyrexia increased; pulse very quick and small. Prostration of strength, approaching to syncope. Pain universal; tongue moist.

Cap: opii gr: ij.

28th. Pyrexia high, yet heat moderate; pulse soft and less frequent; great pain in the orbits and scrobiculus cordis: no stupor, but considerable prostration of strength; tongue white and dry.

Cap: calomel: gr. ij secunda q: q: hora.

P. M. Much better; pyrexia moderate, syn-

cope readily induced by exertion; skin cool, tongue clean; no purging.

Contin: calomel:

19th. Pyrexia moderate, prostration of strength less; despondency, but no stupor; no retching: skin cool, tongue clean; no purging.

Contin: omnia ut antea.

20th. Feels better, has prostration of strength, with head-ach and vertigo, but no stupor: pulse slow and irregular; skin cool, tongue pretty clean; no ptyalism.

Contin: omnia ut antea.

State when admitted into the Hospital.

Patient of a full habit, countenance and eyes heavy, face flushed and swollen; the flushing extends down the neck; eyes suffused and bloodshotten. Complains of severe pains of the head and loins, extending to the calves of the legs; giddiness and great languor. Pulse 88, temperature 102; tongue foul, no appetite; thirst urgent, belly open.

Detrahantur statim ℥ xxx. sanguinis ex arteria temporali.

Cap; pil: jalap: cum calomel.

Habeat julep: aq: ammon: acetat: ℥ ij secunda q: q: hora.

21st. He slept a little towards the morning,

and was pretty easy through the night. Countenance expressive of suffering; flushing of the face and neck still great, and reaching as far as the top of the sternum. Pains of the head and loins much relieved; eyes greatly suffused and blood-shotten; giddiness gone, he answers questions quite collectedly, and seems upon the whole better. Pulse 83, full, but soft; tongue furred, temperature 101; skin dry, thirst urgent; several stools in the night.

Contin: julep: aq: ammon: acetat.

Vespere. Countenance improved, eyes less languid, but still look rather anxious; face and neck less flushed; feels quite easy. Pulse 80, and soft; skin cool, tongue clean, no thirst, belly open.

22d. Passed a good night, and slept well towards the morning. Countenance much improved, flushing diminished; says he is free from pain, but feels languid; pulse 78, temperature 98; skin dry, thirst abated, tongue pretty clean; seems quite free from pain.

Repetantur pil: calomel: et jalap:

Continuetur julep: aq: ammon: acetat:

Vespere. Continues better; one stool.

From this time nothing worth notice occurred. On the 26th he was put on half-diet, and was soon discharged to his duty.

The Notes of the following Cases of Fever, treated by the Surgeon in the Naval Hospital, were not taken, and the Transcript of their Prescription Tickets, given in the last Edition of this Work is now omitted, as little information could be obtained from them respecting the Cases; the Disease, however, exhibited precisely the same symptoms in them, as in the foregoing. They are given principally on account of the morbid appearances found on Dissection, and which cannot fail to throw considerable light on the pathology of this Fever.

Daniel Nash, seaman of the Curaçoa, was received into the Naval Hospital on the 17th of October, with fever, of which he had been several days previously ill on board, and died on the evening of the 24th.

Dissection about Sixteen Hours after Death.

Slight effusion betwixt the dura mater and skull cap. Meningeal arteries very turgid. Circumvolutions of the brain filled with coagulable lymph, of a soft consistence; vessels of the pia mater preternaturally distended with blood, exhibiting strong marks of inflammation, and vio-

lent action, as did every other part of the brain. A considerable quantity of serum in the base of the cranium.

THORAX AND ABDOMEN.

Several adhesions of the right lobe of the lungs to the pleura costalis; a thin layer of coagulable lymph thrown out on their surface. Several ounces of water were found in the cavity of the thorax, and effusion into the lungs had taken place, to a considerable extent. The whole course of the intestines exhibited marks of high inflammation.

John Burn, seaman of his majesty's ship, Leviathan, received from the Lady Mackworth cattle ship September 22d, and died on the 5th of October.

Dissection about Eighteen Hours after Death.

The whole external surface of the body of a deep yellow, suppuration had taken place in the left parotid gland.

On raising the cranium, the smaller branches of the meningeal arteries were very considerably

distended. The superior surface of the dura mater shewed no positive marks of inflammation. Upon turning it up, its inferior surface appeared slightly inflamed; but towards the longitudinal sinus, highly so. The circumvolutions of the brain, more particularly on the superior and posterior part, were filled with coagulable lymph to a very considerable degree; the blood vessels of the pia mater greatly distended with blood, even to the minutest branches, and shewing the most decisive marks of the highest inflammation; the hemispheres, below the falx anteriorly, adhering very firmly together; the blood vessels of the tomentum so completely filled, and shewing such a blood-shotten appearance, that the vessels individually could with difficulty be perceived; the tunica arachnoidea, adhering to the dura mater lining the left temporal bone. No morbid appearance of the medullary substance. The lateral ventricles full of water, as also the fifth, which occupied the whole length of the septum lucidum; the blood vessels of the lateral ventricles distended with blood to an uncommon degree; the third ventricle full of water, and its vessels anteriorly rather turgid.

Vessels of the tentorium very full, exhibiting strong marks of inflammation, but more particularly its inferior surface. Vessels of the pia mater covering the cerebellum, even to the

most minute branches, literally gorged with blood. Vessels of the dura mater of the base of the cranium, more arborescent, and exhibiting much stronger marks of inflammation than on the superior parts. About half an ounce of serum in the base of the cranium.

No marks of disease in the thorax or abdomen, except the distention of the latter cavity; the colon distended with air, gall bladder very full. Substance of the liver of a yellow colour. Stomach containing a quantity of fluid of a yellow colour.

Major Dickenson, seaman of the Lady Mackworth, received into the hospital September 22, 1812, and died on the 28th of the same month.

Dissection Fourteen Hours after Death.

EXTERNAL.

Skin and eyes tinged generally *with a shade of yellow.* Back and shoulders have a livid appearance. Belly loose, and apparently the intestines charged with flatus.

On removing the upper portion of the cranium —The surface of the dura mater extremely vas-

cular, and had something of a blood-shotten appearance; the vessels loaded with blood, apparently much enlarged, and the whole exhibiting high marks of inflammation. The vessels of the pia mater completely gorged with blood, and also in many places, covered with a layer of coagulable lymph. The falx highly inflamed, and the hemispheres anteriorly adhering to each other. The ventricles distended with fluid. The tentorium and septum cerebelli highly inflamed and livid, and the dura mater lining the base of the cranium in the same state.

THORAX AND ABDOMEN.

Lungs a complete livid mass, choaked with blood; the pleura slightly inflamed. The heart exhibited nothing remarkable. The stomach and intestines distended with a dark coloured fluid and air, and the latter exhibiting marks of inflammation through their whole course. The liver much enlarged, and the lower edge of its concave side livid. Gall bladder nearly empty.

Richard Walker, seaman of the Lady Mackworth, received into the hospital September the 20th, and died on the 3d of October.

Appearances on Dissection about Fourteen Hours after Death.

EXTERNAL.

The body generally yellow, the left parotid gland suppurated, the right much inflamed.

On removing the scull-cap, the dura mater appeared of a bright yellow colour, and highly inflamed. The vessels of the pia mater very turgid, and a considerable quantity of coagulable lymph thrown out on the circumvolutions of the brain, particularly at the upper and posterior part, with adhesions of the hemispheres at different points, and marks of active inflammation.

On cutting into the lateral ventricles, there flowed out about two ounces of a yellowish fluid; the choroid plexus, rather flaccid than otherwise. A considerable quantity of fluid in the third ventricle, of the same sensible qualities as that in the lateral. The tentorium cerebelli very vascular, with considerable effusion of lymph on the surface of the cerebellum, and extravasation of serous fluid on the base of the cranium.

On dissecting back the integuments, and raising the sternum, all the membranes lining the cavities of the thorax exhibited a bright yellow appearance. The lungs throughout shewing marks of high inflammation in different parts, but more particularly on the right side, where there was a recent layer of coagulable lymph on their upper part; some effusion into the cavity of the thorax.

Vessels of the stomach preternaturally turgid; stomach distended with flatus, and containing a dark coloured fluid; blood vessels of the mesentery and intestines very full. Intestines distended with flatus, and containing a matter similar to that found in the stomach.

CASES

COMMUNICATED BY SOME OF THE SURGEONS OF THE FLEET.

From Dr. Ross, Surgeon of the Resistance.

Mr. Morgan, surgeon of his majesty's ship Temeraire, ætat: forty, of a full habit and florid complexion, was indisposed for sevéral days with general languor, loss of appetite, nausea, and a sense of weight about the head; his tongue was white and moist, accompanied by an unpleasant taste in his mouth. Mr. Morgan, imagining that his illness proceeded from a foul stomach only, and would soon go off, took a cathartic medicine, which operated roughly, and he felt relieved. About two days afterwards he complained of severe head-ach, but particularly of pain, and a sense of weight above the eyes, which had a dull heavy appearance, and his eye-lids were much swollen. The pulse was about 120, but had no particular marks to indicate an inflammatory action; indeed it was such, that without other concomi-

tant circumstances, and without experience in similar cases, many practitioners would have been averse to the abstraction of blood. Sixteen ounces of blood were immediately taken from the arm, with much sensible benefit; and after it, his head, which he described "as being like to split," was much relieved, and he was not so acutely sensible to the noise around him. Draughts of the julep: aq: ammon: acetat: were taken every hour. In the evening his severe head-ach returned, and was accompanied by pain in the side, and difficult respiration; the bleeding was again repeated with instantaneous relief; and I left him for the night, with a request that he would send for me the instant he should feel any return of head-ach or difficult inspiration. He passed an indifferent night, but did not find it necessary to call my assistance. In the morning, at half past eight, he complained again of much head-ach, and the pain shooting above the orbits of the eyes. I immediately opened the temporal artery, but from its retraction, could not procure more than three or four ounces of blood. Three leeches were then applied to each temple, and for five hours the bleeding from the orifices was encouraged by warm fomentations. In consequence, however, of the symptoms not being by these means alleviated, a cupping glass was applied above the

orifices made by the leeches on each temple, from whence about twelve ounces of blood were procured in a short time; and it was with much satisfaction I heard the patient declare himself relieved. From this moment the febrile symptoms gradually abated, the pulse became moderate; and the skin, which was before but partially, was now uniformly moist; and he informed me, that he had a copious evacuation of urine, to the irritation of which he had not before been sensible. After the fever disappeared, an attack of gout, to which Mr. Morgan is subject, succeeded, and it fixed, as it had sometimes done before, on the knee joint; after quitting which, it took its station in the great toe, where it now remains.

On reading the above case to Mr. Morgan, I find that two symptoms, which existed at the height of his illness, have not been mentioned; these are vomiting of bilious matter and grumous blood, accompanied by epistaxis. The only medicine he took, besides the draughts, were cathartics of calomel and extract of colocynth with aloes.

There can, I trust, be no doubt, but that Mr. Morgan's fever was of the same nature with the epidemic that then prevailed so extensively; he believes so himself, and candidly gives me the credit of having saved his life by the timely abstraction of blood.

I am the more particular in mentioning this case, as it occurred in the person of a medical man of considerable experience, and whose candour is such as to acknowledge the efficacy of the treatment, though it was contrary to the plan he had adopted with his own patients under similar circumstances.

CASE II.

Lieutenant Hooper, of his majesty's ship Temeraire, had been indisposed for two days with general languor, loss of appetite, accompanied by a bad taste in the mouth, and head-ach; which symptoms he attributed to having caught cold, and were at first little attended to. I was sent for at midnight, and found him complaining of intense head-ach, and particularly of pain above the orbits of the eyes; the pulse was about 130, and rather hard; the tongue foul, but moist, with considerable thirst, and he complained much of sensibility to the noise around him; his skin was hot and dry. The temporal artery was immediately opened, and, while the blood was flowing, he declared himself quite relieved, and his head-ach almost gone. By the time that there were twenty ounces in the cup, his head-ach, and pain above the orbits, completely vanished, and the temperature

of his head, which before communicated a burning sensation to the hand, was reduced to the natural standard. In the morning he informed me, that after the bleeding he had had a comfortable sleep; but that though he still felt a weight about his head, he was much better. His pulse was then at 90, and the skin of a natural temperature, and moist; the tongue was foul, and he had much thirst. A cathartic of calomel and jalap was given, and he took an effervescing draught every hour. Next morning at six o'clock I was again sent for; my patient complained of having passed a restless night, his head-ach returned, accompanied by a buzzing noise in his ears, together with much increase of heat. The temporal artery was again cut with the same instantaneous benefit as at first; twelve ounces were taken at this time; the first time above twenty-two were abstracted. The blood each time consisted of a firm coagulum, and did not separate into crassamentum and serum.

Mr. Hooper, from this time, had no return of fever, and in about a week was restored to health.

CASE III.

——— Coleman, the assistant to the ward-room steward, was affected with the fever in a similar manner to Mr. Hooper; by one bleeding from the arm, he felt himself so well, that, unknown to me, he returned to his duty.

The fever, however, again attacked him next day more severely than at first, and was again arrested by another copious venœsection, and, after this, he had a rapid recovery. Before a week elapsed, during which he took several brisk cathartics, he was at his duty.

TWO CASES OF RELAPSE,

IN WHICH THE GOOD EFFECTS OF THE ABSTRACTION OF BLOOD WERE STRONGLY EXEMPLIFIED.

Also communicated by Dr. Alexander Ross.

Naval Hospital, Mahon, Oct. 26, 1811.

Thomas Bennison, Seaman of his majesty's ship Temeraire, ætat 22, was taken ill suddenly this morning with vomiting, accompanied by

general uneasiness, head-ach, and pain in the abdomen. His description of his own sensations was very indistinct and confused. On visiting him at half past seven this morning, I found him vomiting a bilious looking matter, and complaining chiefly of head-ach and pain in the abdomen; his pulse was 120, skin very hot, and rather dry; temporal arteries throbbing strongly, and his tongue rather parched. The temporal artery was immediately opened, on the left side of the head; but, as only five ounces of blood could be procured, the artery of the other side was also opened, from which fourteen ounces of blood were drawn, with almost instantaneous relief to the patient; the pulse was much diminished in frequency, and the heat of skin became more natural. A bolus, consisting of submuriat: hydrarg: gr: v pulv: jalap: gr: xv was then given, with orders to repeat it in six hours, if the first should not operate.

Oct. 27. Cathartic operated freely; to-day he is quite free from fever; tongue, skin, &c. in the natural state.

28th, 29th, 30th, continues to recover.

REMARKS.

This patient had been on the convalescent list from the fever, which then so generally

prevailed in the Temeraire and Invincible; and the surgeon of the latter, and assistant of the former, did me the favour, at my particular request, to witness the effects of the bleeding. They allowed that the case was exactly similar to the prevailing epidemic, which had been treated by them in a manner quite contrary to that followed in the present instance.

CASE II.

Oct. 27, 1811.

Thomas Mantoff, seaman, belonging to the Temeraire, ætat: about 20, was taken ill yesterday with shivering, to which succeeded heat, head-ach, and pains all over his body; the tongue was white and moist, and he complained of general debility. Pulse 125, and rather weak. Has been convalescent these fourteen days past from an attack of the prevailing fever, together with bowel complaint, and this is the third relapse. The temporal artery was immediately opened, and sixteen ounces of blood were abstracted, with sensible diminution of the febrile action; the head-ach was not however removed: a cathartic bolus, as in the preceding case, was given. In the middle of the day the febrile symptoms increased; fourteen ounces of blood were taken from the arm, and the cathartic

repeated. The bleeding again allayed the febrile action, but the cathartic was rejected.

Decoct: hordei ad libitum pro potu cum super tart: potassæ acidulat:

Injiciatur enema cathart:

Low diet.

28th. The febrile symptoms returned last night, accompanied by severe head-ach; the pain shooting across the orbits; the tongue was foul, and the skin much hotter than natural. The bleeding was again repeated.

Repetatur bolus cathart:

29th. Complains of general uneasiness, and of pains in all his limbs, which, from his description, resemble acute rheumatism.

Continuetur potus ut antea.

Nov. 1st. Since last report the febrile symptoms have been gradually diminishing. He still complains of general uneasiness; skin and eyes are suffused with bile.

Repetatur bolus cathart:

8th. Got out of bed to-day for the first time. The yellowness of the skin and eyes, which some days ago was very deep, begins to disappear. He has used no medicine lately except jalap and calomel, which were given to remove constipation.

Put on half diet.

REMARKS.

The surgeon of the Invincible, and assistant of the Temeraire, in this case also, did me the favour to attend at my request, and mark the effects of the abstraction of blood; they did not deny that this, as well as several other relapses that came under my care at the hospital, and of whom *not one died*, was of the same nature as the then prevailing epidemic.

(Signed) A. ROSS, M.D.
Surgeon, Naval Hospital, Mahon,
Nov. 8, 1811.

To Dr. Burnett.

CASES.

Communicated by Mr. Boyd, Surgeon of His Majesty's Ship Repulse.

John Singleton, seaman, ætat 29.

August 6th at 11 A. M. Complained of being affected with a sense of cold along the spine, succeeded by severe head-ach, red watery appearance of the eyes, pain in the loins and epigastric region, with nausea, and inclination to vo-

mit, accompanied with general soreness all over the limbs, particularly the calves of the legs; pulse 82, and oppressed; temperature 98; tongue white and furred, much thirst, bowels constipated. He is of a full robust habit of body, and was lately on shore, where he indulged in excessive intemperance.

V: S: ad ℥ xviij et capiat submur: hydrarg: gr: x horis quartis.

7 P. M. Head-ach severe, nausea, and general restlessness; pulse 102, and rather hard; temperature 99, great thirst, bowels not moved.

Habeat enemapurgans statim et totum corpus aqua tepida perfundatur. Continuetur submur: hydrarg: applicentur hirudines xii temporibus.

7th. A restless night, head-ach severe, pains in the loins and epigastric region continue; pulse 120, and soft; temperature 100, tongue furred, thirst great; bowels not freely moved, stools scanty, black and fetid.

Capiat pulv: jalap: ʒ j submur: hydrarg: gr: x statim.

Admoveantur linteamina aquâ frigidâ madefacta adraso capiti.

7 P. M. Head-ach less, pulse 120, and soft; temperature 100, skin moist, thirst great, bowels moved, stools copious, liquid and black.

Perfundatur corpus aquâ frigidâ et caput ut antea refrigeretur.

8th. A bad night; severe head-ach; occasional vomiting of bilious matter; pulse 112, and soft, temperature 100; skin moist, tongue furred and yellow, thirst great, bowels not regular, stools black and gelatinous.

Repetatur aquæ tepidæ affusio et capiat submuriat: hydrarg: gr: x horis quartis.

Refrigerationes capitis.

7 P.M. Head-ach not so severe, pulse 112, temperature 100; skin moist, and has had three black fetid stools during the day, and there appears a yellow tinge of the eyes.

Repetantur med: affusio aquæ tepidæ et refrig: cap:

9th. *There is a deep yellow suffusion* over the whole body and limbs this morning; has pain in the epigastric region, with inclination to vomit; head-ach, with small black acrid stools, tinged with blood; pulse 120, and small; skin moist, tongue foul and brown, thirst great.

Repetantur submur: hydrarg: gr: x ter die.

7 P.M. Has vomited every thing he has taken during the day; great pain at the pit of the stomach and region of the liver; has had no stool. Pulse 120 and small, temperature 98.

Habeat enema purgans, et affricetur ventri-

culi regio, cum ung: hydrarg: fort: camphorat: ʒ i per semihoræ spatium.

10th. Has been delirious during the greater part of the night; pain in the epigastric region, with vomiting of a black chocolate coloured matter, distresses him much; pulse irregular and small, temperature 96; skin moist, tongue foul and black; is thirsty; refuses almost every thing, and what he takes is immediately rejected; stools small, black, and acrid, so as to excoriate the anus and parts adjacent.

Habeat enema emolliens et repetatur ung: hydrarg: camphor: pro frictione ut antea.

7 P. M. Much as in the morning, only stools bloody; vomits every thing, even water itself.

11th. Tossing about the whole night, great anxiety, laborious breathing; great pain upon pressure of the epigastric region; vomits a black coffee-coloured matter. Pulse sometimes full, sometimes irregular, and sometimes intermittent; temperature 96, skin moist: stools pass involuntarily, and there is a retention of urine, with low delirium.

Habeat quodcunque cupiat.

7 P. M. Delirious, and will take nothing; strength sinks.

12th. Subsultus tendinum, cold clammy sweats all over the body, hiccough, hæmorrhage from

the nose, involuntary stools, small intermittent pulse, &c.

At 10 A.M. he became convulsed, and shortly afterwards death terminated his sufferings.

Mr. Boyd adds in a note—"The cases that "have proved fatal, have been so similar to the "above, that it would be of no use to transcribe "them."

The following Case is extracted from Mr. Boyd's Journal at the Transport Office.

J. Murphy, ætat 25, seaman.

August, 7th. Complains of violent head-ach, pains of the limbs and in the epigastric region, nausea and vomiting; pulse 100 and full; skin dry and warm; tongue white; thirst; eyes red and watery; great lassitude and anxiety.

Quam primum V: S: ad ʒ xviii.

℞. Pulv: jalap: ℈i: calomel: gr: x M: fiat bol: ex syrup: simplici statim sumend:

7 P. M. Violent head-ach, pulse 100, full and tense; skin warm and dry; bowels moved once, stool large, black and fetid.

Rep: V: S: ad: ʒ xii.

℞. Submur: hydrarg: gr: x. Mucilag: gum acaciæ q: s: ut fiat bol: statim sumend: Pediluvium.

8th. Restless night; pulse 100, and soft, skin warm and moist, tongue foul, considerable thirst, bowels confined.

Rep: submur: hydrarg: gr: x horis quartis.

7 P. M. Injiciatur enema purgans et totum corpus aqua tepida perfundatur.

9th. Bad night; pulse 100, and soft, skin warm and dry, tongue foul and yellow; bowels moved, stools black and gelatinous, with distressing pain in the epigastric region.

Repetatur submur: hydrarg: gr: x horis quartis.

7 P. M. No stools during the day; pain in the epigastric region distressing:

Admoveatur regioni epigastricæ, emplast: Lyttæ. Injiciatur enema cathart.

10th. A bad night; pulse 100, and soft, skin dry and warm, tongue foul and yellow, thirst great; stools black and very scanty; great pain in the epigastric region, vomits every thing; deep yellow suffusion all over the body and limbs.

Injiciatur enema ut antea.

Ung: hydrarg: fort: ʒ i. region: epigast: illinatur

7 P. M. Symptoms as in the morning.

Rep: enema cathart: et affusio aquæ tepidæ.

11th. A bad night; symptoms as yesterday; no stool.

Rep: ung: hydrarg: ut antea

7 P. M. No stool. Injiciatur enema cathart:

Repetantur submur: hydrarg: gr: x.

12th. A restless night; pulse 100, and soft, skin warm and moist; tongue foul and yellow; much thirst; stools small and black; vomits every kind of liquid, and has great pain at the pit of his stomach.

Repetantur submur: hydrarg: gr: x ut antea.

Habeat misturam effervescentem, quæ repetatur pro ne nata.

7 P. M. No stool; but has frequent desire; vomiting continues.

Injiciatur enema cathart: ut: antea.

13th. All the symptoms increased, pulse 100.

Habeat submur: hydrarg: gr: v. sub forma boli.

7 P M. No stool. Injiciatur enema ut antea.

14th. Delirium during the night; pulse irregular and intermittent; skin cold, tongue dry and black; stools pass involuntarily; refuses every thing. Died.

William Barns, seaman, ætat 24.

August 6th, at 7 P. M. Complained of severe head-ach, chiefly referred to the temples, pains

in the loins, anorexia, and general lassitude over the body and limbs, with pain in the epigastric region, particularly at the pit of the stomach; pulse 88, and full; temperature 100, tongue white and furred; much thirst, bowels confined. He is of a full habit of body, and assigns no cause for the origin of these complaints.

Quam primum V: S: ad ℥ xxx; et postea capiat submur: hydrarg: gr: x ex syrupo simplici.

7th. Has had a restless night; head-ach severe; eyes red and watery, pains of the loins and calves of the legs distressing. Pulse 100, and tense: temperature 100, tongue furred and yellow; much thirst, bowels not moved; pain at the pit of the stomach continues, with slight nausea.

Repetatur V: S: ad ℥ xx et postea capiat solut: sulph: magnes: ℥ ij omni bihora, donec purgatus sit.

7 P. M. Expressed much relief after the bleeding; but the head-ach has increased since the evening. Pulse 96, and firm; temperature 100; thirst; bowels moved freely, stools black and gelatinous.

Repetatur V: S: ad ℥ xx et totum corpus aqua frigida perfundatur.

8th. Has had a good night; little or no head-ach this morning; inflammatory appearance of

the eyes almost gone; pulse 70, and soft; temperature 98, tongue white and moist; thirst moderate; no stool since yesterday, but has hardly any pain at the pit of his stomach; requests something to eat.

Habeat submur: hydrarg: gr: v horis quartis; et diæta antiphlogistica accurate est administranda.

7 P. M. Continues better; bowels moved twice, stools black and gelatinous.

Repetatur affusio aquæ tepidæ corpori toto.

9th. Expresses himself free from complaint, only weak. Pulse 65 and soft, temperature 94; tongue white and moist, thirst abated, bowels easy, stools yellow; and there appears a slight jaundiced tint of the albugineous coat of the eyes; appetite good.

Habeat submur: hydrarg: gr: iij ter die.

7 P. M. Continues doing well.

10th. No complaint; pulse 60, and small, temperature natural; tongue clean and moist; no thirst, bowels easy, stools yellow.

Repetantur submur: hydrarg: gr: ij bis die.

11th. Convalescent.

Infus: quassiæ ʒ ij ter die.

Robert Dedderman, marine, ætat 20.

August 6th. Complains of being afflicted with severe head-ach, chiefly about the bottom of the orbits, which prevents him from opening the eye-lids without the utmost uneasiness; eyes exhibit an inflammatory aspect; has pains in the loins and calves of the legs, and universal lassitude over the body and limbs, accompanied with pain in the epigastric region, and inclination to vomit. Pulse 100, small and oppressed, temperature 100, tongue furred and brown; thirst great, bowels costive; he is of a full plethoric habit of body, and assigns no cause for these complaints.

Quam primum V: S: ad ℥ xxx et capiat submuriat: hydrarg: gr: viij.

℞ Pulv: jalap: gr: xx f: bolus.

7 P.M. Experienced much relief from the bleeding, but has now a violent return of head-ach. Pulse rose after venæsection; temperature 102; bowels moved thrice; stools black and fetid.

Repetatur V: S: ad ℥ xx; et postea perfundatur totum corpus aqua tepida.

7th. Has had a restless night; head-ach not severe; eyes not so red, pain in the epigastric region continues, with inclination to vomit; pulse 95, and soft, temperature 97, tongue furred

and brown; thirst much, no stool since yesterday.

Applicenter hirudines xii temporibus.

℞ Pulv: jalap: gr: xv submur: hydrarg: gr: x f: bolus ex. syrupo simplici statim sumend:

7 P. M. Experienced much relief from the leeches; little or no head-ach; pulse 90, and soft, temperature 98; thirst; bowels moved freely, stools large, black and fetid.

Repetatur affusio aquæ tepidæ.

8th. A good night, no head-ach; inflammatory aspect of the eyes almost gone; pain in the epigastric region, and inclination to vomit removed. Pulse 70 and soft; temperature 94; tongue white, but not furred; thirst abated; bowels easy, stools yellow, and there appears a slight yellowish tinge of the eyes.

Capiat submuriat: hydrarg: gr: iij ter die.

7 P. M. No increase of symptoms.

9th. A good night; no head-ach; eyes a little jaundiced; pulse 60 and equal, temperature natural; tongue moist and white, no thirst, bowels easy.

Capiat submuriat: hydrarg: gr: iij mane nocteque.

10th, 11th, 12th. Continued progressively getting better, and is now convalescent.

CASES

Communicated by Mr. Rudland, Surgeon of His Majesty's Ship Bombay.

June 12th. John Grant, marine, aged 24 years, was attacked yesterday morning with cold rigors, followed by heat, thirst, and anxiety; sickness at the stomach, and severe retching, without bringing up any thing. He did not apply for assistance, and in some measure recovered from this indisposition. This morning he had a slight return, but did not then complain; he continued getting worse till the afternoon, when the symptoms (upon his being brought to the sick-berth) were, severe pain of the head, great lassitude, heat, thirst, and anxiety; hot and dry skin, white tongue, flushed face, and watery eyes; griping pains in the bowels, and frequent stools, which have a dark bilious appearance. Pulse 130 and full.

V: sectio ad ℥ xxxiv.

℞ Calomel; gr: v. Pulv: jalap: gr: xv syrup: q: s: f: bolus stat: sumend:

℞ Solut: sulph: magnes: ℥ i Ess: menth: pip: gutt: aliquot; secundis horis sumend: pro re nata.

13th. His head was very much relieved by the bleeding for several hours, and he has not vomited since. The cathartic operated very freely, and the griping is much better; the retching is much amended, but he still feels considerable nausea, and, about an hour since, had a return of pyrexia, with pain in the head, quick and full pulse, &c.

Repetatur V: S: ad ℥ xxiv.

Habeat haust: salin:

Vespere. He again experienced instant relief from the bleeding, his pulse decreasing in frequency and hardness; he has had several stools during the day, and perspired very freely.

At 4 A. M. he had an increase of pyrexia, accompanied by pain in the head, and nausea; heat, anxiety, thirst, &c. Pulse 120, and still full; skin hot and dry.

Repetatur V: S: ad ℥ xx.

Repetatur haust: salin: pro re nata.

Repetatur haust: cathart: ut antea.

14th. Much relieved by the bleeding, and passed a pretty good night, has no head-ach; thirst more moderate, had several stools during the night; pulse soft and 88.

Repetatur haust: salin:

Vespere. Has continued free from pain and sickness all day, and has no sensible increase of fever this evening.

Repetatur haust: salin:

15th. He passed a good night, and appears free from pyrexia; his bowels are open, and griping quite gone; pulse 84, soft and regular; tongue white, no thirst.

Repetatur haust: salin:

Vespere. At 5 P. M. he complained of having considerable pain in the head and back, the former shooting across the temples, and accompanied by vertigo; pulse 110 and full, face flushed, skin hot and dry. He was so sensible of the relief he had before instantly obtained by the loss of blood, that he now earnestly requested to be bled, if there were no objections to it.

Repetatur V: S: ad ℥ xx.

Repetatur bolus cathart:

Repetatur haust: salin:

16th. His head was much relieved by the bleeding; he passed a good night, during which he perspired very freely; he had several copious stools from the bolus, and now only complains of weakness. Pulse soft and 88, tongue moist, skin natural.

Continueter haust: salin: ut antea.

Vespere. He continues free from fever; pulse

84, soft and regular; very little thirst, bowels open.

Continuetur haust: salin: ut antea.

17th. Passed a good night, has no complaint whatever; pulse, tongue, and skin natural.

Prætermittatur haust: salin:

℞ Infus: quassiæ ʒ iſs.

Ess: M: pip: gutt: aliquot ter in die sumend:

Half diet.

Vespere. No alteration.

Perstet æger ut antea.

18th. Has no appearance of disease, except having a less florid countenance than usual. At his own request he returned to his duty, which was that of servant to the captain of marines.

23d June. Patrick Ryan, seaman, aged 30 years, was attacked by cold rigors, followed by intense heat; pain in the head, delirium, thirst, and anxiety, hot and dry skin, tongue white, with considerable thirst; flushed face and watery eyes, which are tinged yellow; full and throbbing pulse, and beating at the rate of 90: increased action of the temporal arteries; grip-

ing pain in the bowels, sickness and vomiting, with frequent bilious stools.

V: sectio ad ℥ xxvi.

Half an hour afterwards he took a bolus, composed of ten grains of calomel and fifteen of jalap, and was ordered an ounce of the solution of sulphate of magnesia every hour until freely purged.

Vespere. He was relieved for several hours by the bleeding, but has still great pain of the head, nausea, and thirst; the cathartics operated freely. Pulse 98 and full, skin of a burning heat.

Habeat haust: salin: secund: q q: hora.

Repetatur V: sectio ad ℥ xxxiv.

24th. He passed a very good night; was instantly relieved by the bleeding; he became calm and collected, with a general diaphoresis; the pulse became soft and regular, and the thirst continued to decrease; during the first part of the night he had several copious stools of a dark appearance, but without any griping; pulse 88 and soft; has little or no pain in the head, or nausea.

Vespere. Pulse 84; has no return of pyrexia, and appears free from complaint except a little occasional griping; little or no thirst, skin moist, and very little above its natural temperature.

Repetatur haust: cathart: ut antea.

25th. Had several stools from the cathartic;

pulse, skin, and tongue natural, no pain, sickness, or thirst.

Prætermittantur haust: salin:

Habeat infus: quassiæ ʒ iſs ter in die.

Half diet, and no wine.

Vespere. Pulse 84, no return of pyrexia; bowels open.

Continuetur infus: quassiæ.

25th. Passed a good night; pulse 82, skin, tongue, and bowels natural.

Repetantur medicamenta ut antea.

Full diet, half a pint of wine.

27th. Continues mending; pulse 80, bowels open.

Repetantur medicamenta ut antea.

28th Discharged to duty.

PART II.

Principiis obsta, sero medicina paratur, cum mala per longas convaluere moras.---OVID.

FACTS AND OBSERVATIONS

ILLUSTRATIVE OF THE

NATURE, SYMPTOMS & TREATMENT

OF

Fever in the Mediterranean.

IN the year 1799, while employed in the Goliath of 74 guns, in the blockade of Malta, the ship's company were attacked with a Fever, similar to one then prevalent in the island. Our boats had been employed in watering at Marsa Scala, a small harbour to the S. E. of La Valette; when, from blowing weather coming on, a boat's crew, with an officer, were left on shore all night. A few days after this, the officer was attacked with fever, and several of the boat's crew soon followed. It extended to about forty of the ship's company; and two midshipmen, who were also employed in the boats, or had been on shore on leave, were amongst the number taken ill.

The most prominent symptoms were nausea, and in some, vomiting, succeeded by head-ach, flushed face, full and frequent pulse, thirst, and white tongue, and, in most cases, delirium; in two or three instances the parotids suppurated.

These patients on their complaining were bled and purged, the bleeding being repeated according to the urgency of the symptoms; an open state of the bowels was preserved, and a mild diaphoresis kept up; blisters were applied to the nape of the neck and forehead, and a strict antiphlogistic regimen pursued. This soon produced a cessation of pyrexia, when tonics and a well regulated diet completed the cure.

This circumstance occurred in the month of May 1799, and the sick were landed and placed in a large castle, near St. Paul's Bay, under my care, where the whole recovered. During the remainder of the summer we were mostly employed at Naples, under the command of Lord Nelson; and many sporadic cases of Fever occurred, which were successfully treated by the early use of evacuants. In the winter, I proceeded in the Goliath to England.

I returned to the Mediterranean in the summer of 1800, and while lying in Port Mahon, with the Expedition under the command of Vice Admiral Lord Keith, and General Sir Ralph Abercrombie, in the months of July and August,

many of the ship's companies were attacked with Fever, and among the rest, the Diadem's, of which I was then surgeon. There were about forty men taken ill with fever in the Diadem, and so speedily was a remission procured by the free use of the lancet, that I had only occasion to send two or three to the Hospital. In some instances, they were first attacked with cholera morbus; and when the evacuations ceased, the true nature of the disease became manifest. In a few, the disease appeared to be entirely carried off by the vomiting and purging. Its most general manner of attack was by shivering or chilliness, accompanied or succeeded by prostration of strength, and nausea; re-action soon took place, when excruciating head-ach came on, with pain or uneasiness about the epigastric region, and sometimes bilious vomiting; pains in the loins, limbs, and calves of the legs, white tongue and thirst, pulse full and strong, and in many cases considerable constipation. They were all, except two cases, bled freely in the beginning and purged; and took saline julep; the bowels were kept open, blisters, to remove local pain, applied, and they had, occasionally, small doses of calomel and pulv: antimonialis;*

* In several of the first cases emetics were given, which I had afterwards occasion to regret.

immersion of the feet in warm water was frequently practised, and in some cases the head, was sponged and kept cool by vinegar and water, repeatedly applied. The febrile paroxysm was soon cut short, in all but three cases, two of which were not bled, from some supposed symptoms of debility; these had yellow suffusion, and a most protracted recovery: the third had extreme irritability of stomach, which I endeavoured in vain to allay. During a forenoon that I was absent on duty, my assistant gave him an emetic of tartarized antimony; the vomiting increased, and never afterwards for a moment left him; he passed blood by the nose, mouth, and anus, and finally died at the Hospital. The others recovered rapidly.

On looking over the notes I took of the whole, I find that those who were bled most liberally in the beginning, recovered soonest, and in these cases the yellow suffusion was prevented.

Shortly after this I joined the Athenien 64; we careened and fitted at Malta in the hottest season of the year, the thermometer in the middle of the day, in the Dock-yard and neighbourhood, often standing in the shade from 85 to 90. Our ship's company were necessarily much exposed to the sun, though they were not allowed to work for some hours in the middle of

the day; and we had many attacks of fever, attended by great local determination; but by a proper use of the lancet in the *early stage*, joined to purgatives, they all speedily recovered: none died, nor was one sent to the Hospital during two years that I was Surgeon of that ship. Except in cases arising from causes such as are just mentioned, this ship, which was built at Malta, always continued remarkably healthy.

In May 1810, I had the honour of being appointed Physician to the Mediterranean Fleet. When I arrived at Cadiz in the month of September following, I found considerable alarm prevailing in the squadron under the command of Sir Richard Keats, on account of a fever then existing on board the Achille, which was reported to Sir Richard, *to be the yellow fever of the West Indies, and of a very malignant and infectious nature.* Two had died, several were very ill, and some had a yellow suffusion over the whole body. The ship was preparing to go to sea in consequence, and the sick were placed in a transport, moored out from the squadron. I immediately received Sir Richard's directions to visit them, and report the nature of the malady. The symptoms were, in general, similar to those mentioned as occurring at Mahon in 1800; and, in some patients, very considerable determination to the thoracic viscera

was present. Emetics, bark, camphor, wine, and opium, had been employed in the treatment of these patients, which I directed to be laid aside, and in cases where it was judged necessary, the lancet was had recourse to, and used freely, and also purgatives: this soon produced a change in the features of the disease, and the whole, except one man, speedily recovered. This man was a very drunken character, and had been ill four days before I saw him; he had severe pain in the breast, with great anxiety, and constant vomiting of a dark bilious matter; his head-ach was great, with full pulse, foul tongue, and hurried respiration, and the yellow suffusion had begun to make its appearance in his eyes, and slightly around the neck. He had taken an emetic, and subsequently, bark, wine, camphor and opium: he was blooded, and took cathartic medicines with relief; but the disease was too far advanced to pursue that active line of practice which had been found so eminently successful, when employed in the early stage of the fevers of this country. The body was examined after death, by Mr. Williams, surgeon of the ship, in the presence of Mr. Risk, surgeon of the flag ship, and myself. The thoracic viscera generally, bore high marks of inflammation; the pericardium greatly so, being much thickened, and adhering through its whole extent

to the heart, from which it was with difficulty separated: there were numerous adhesions of the lungs to the pleura costalis, and effusion had taken place into the left lobe. The stomach, particularly towards its cardiac opening, was greatly inflamed.

On my arrival at Gibraltar, in September, I understood the Garrison to be very healthy,* and in the Naval Hospital there was not a case of fever. The weather was very warm, the thermometer, in the shade, ranging from 75 to 80. About the 18th or 19th, a deluge of rain fell, with thunder and lightning, which continued nearly three days without ceasing. *The water poured in torrents from the upper parts of the rock, bringing with it the putrid animal and vegetable matters, which are to be found in such abundance in most parts of the garrison.* In many places there was no outlet for this water, or rather the outlets were not pervious: in front of the houses in Rosea Bay, there was at one time nearly three feet water, and it ran out of the embrasures. *The weather became very warm after the rain had fallen, and easterly winds were for some time prevalent.*

* *I heard,* that some severe cases of fever, amongst the bakers employed in making bread for the army, about this time took place.

About the 13th or 14th of September, Commodore Penrose had arrived from England, and hoisted his broad pendant in the San Juan; the Commodore brought with him about three hundred men, who were sent on board the San Juan for the purpose of manning a flotilla then forming. On the 28th, 29th, and 30th, it was reported by letter to me, (for I had proceeded to the Fleet) that twenty-six men were received into the Naval Hospital labouring under fever, and several more followed them on the succeeding days. The first symptoms of these men, were prostration of strength, succeeded by rigors; in some cases, accompanied or preceded by cynanche tonsillaris, great head-ach, nausea, and irritability of stomach, frequent pulse, and as the disease advanced, the yellow suffusion, in many cases, manifested itself. The treatment of these patients was by purgatives, calomel, blisters to the region of the stomach, and gentle diaphoretics; in the severer cases, the cold affusion was attended with advantage; three were bled once; four out of the whole died, neither of whom had been bled. In the case of one who was examined after death, and in whom the morbid affection of the head was severe, marks of high inflammation of the brain were detected, the vessels on the surface being exceedingly turgid; and effusion to a very considerable ex-

tent had taken place in the ventricles: the gall-bladder was full of a dark inspissated substance, like pitch.

I joined the fleet in the beginning of October, and found them in Mahon, completing their water and provisions, and the weather was still very warm. The ships worked night and day to get on board their supplies, and the men were necessarily much exposed to the sun in the day, and to the dews at night: this, added to intemperance, occasioned many severe attacks of fever and cholera morbus; there were also, in some of the ships, many attacked with diarrhœa. The fever had the usual symptoms of the bilious remittent, and being treated by a liberal use of the lancet and purgatives, in its early stage, few cases proved fatal, and the crews soon returned (after going to sea) to their usual good health. Inflammatory affections of the abdominal viscera, with irritability of stomach were frequent, and in those cases the warm-bath was found to give much relief.

The health of the fleet being restored, I received the orders of the Commander in Chief, to proceed to the eastward, and examine into the state of health of the ships, and also into the hospital departments. In Sicily, I found the ships in general healthy; but, I was informed by Dr. Ross, Surgeon of the Warrior, that

during the summer months, while employed in the Faro of Messina, several of his men had been attacked with fever. Dr. Ross soon saw the inefficacy of the usual mode of treating fever, as applied to the febrile diseases of this country; *and with a liberality and candour well worthy of imitation,* had recourse to a different line of practice, which he saw pursued on shore, with great success, by the Medical Officers of the army. Dr. Ross, in a statement accompanied by some cases with which he has favoured me, observes, "At the time the seven cases, "now sent to you, occurred, the Warrior's "ship's company were much exposed to harass-"ing duty in the Faro of Messina; a great "number of them were employed in gun boats, "which were continually attacking the enemy's "batteries, or annoying their flotilla on the "coast of Calabria. Others, besides the fa-"tiguing duty they had to perform during the "day under a scorching sun, were also exposed "in the guard boats to the heavy dews of the "night. To such causes the origin of the "fever, which then prevailed in His Majesty's "ship Warrior, may with justice be attri-"buted.

"In the detail of the cases, you will observe, "that debility is mentioned generally as the "most prominent feature; that, also, in the

" whole of them, there existed an evident deter-
" mination to the head, lungs, or some other
" viscus, as is sufficiently indicated by the exis-
" tence of pain in some particular part.

" It was these deceitful marks of debility
" which prevented my having recourse to ab-
" straction of blood, a mode of practice from
" which, at this period, I saw the best effects
" among the patients labouring under the same
" fever at the general hospital of Messina, and
" treated with the greatest success by my friends,
" Dr. Calvert and Dr. Irvine, physicians to the
" forces. Three of the seven cases were sent to
" the military hospital under their care; the first,
" William Parker, marine, was not bled, for the
" reason that the disease was too far advanced
" previous to his being sent. The second, J.
" Pacal, was bled, but died the same day he was
" sent on shore. The other case, Robert Maha-
" gan, who came under Dr. Irvine's care on the
" second day of his illness, was cured by copious
" and repeated abstractions of blood, which he
" underwent, particularly from the temporal ar-
" tery. The convalescence was much more ra-
" pid, and debility far less, than in those who
" had not experienced this mode of treatment."

Nothing very particular presented itself at Malta for some time; but the Eagle, of 74 guns, having arrived to careen, her men were quar-

tered in a barrack, nearly a mile from the ship, where they had easy access to spirits and wine, and committed the usual excesses of sailors when on shore. The effects of this were soon visible, for about the middle of December a fever made its appearance amongst them, and ultimately extended to nearly sixty of her men. The surgeon considered it at first to be purely of a typhoid nature; but after some conversation with me, and having seen the salutary effects of evacuations in several cases, which were under my friend Mr. Allen's care to the hospital, he readily came into our views: a different mode of practice was pursued; the whole sent to the hospital under Mr. Allen's care, recovered quickly; and, what was very satisfactory, without the smallest organic disease being left. In this fever, local affections were very severe, and obvious. In a few, the brain: in some the abdominal viscera; and in most the lungs, were the parts affected. In several cases there was great tension of the abdomen. The other symptoms were such as usually mark the fevers in this country; but the disease being cut short by early evacuations, suffusion of bile appeared only in a few cases.

Mr. Allen, surgeon of the Naval Hospital at Malta, in his report to me for the month of December, 1810, says, "During this month

" several patients have been received from the " Eagle afflicted with fever, and the symptoms " are highly inflammatory; the brain, stomach, " liver, thoracic and abdominal viscera, are par- " ticularly affected. The pulse is full and fre- " quent, varying from 96 to 120: skin hot and " dry, and eyes suffused. Early bleeding, re- " peated whilst the symptoms indicated its ne- " cessity, frequently carried to the extent of six " or seven pounds; open bowels; blisters to " the epigastric region; the patient taking the " aq: ammon: acetat every three hours, and ob- " serving strictly the antiphlogistic regimen, has " been found the most successful method of cure; " and in a few days the disease was terminated. " By this plan of treatment, the yellow suffusion " which takes place in this fever (if neglected), " was completely checked; which I attribute " entirely to the early bleeding subduing the in- " flammatory state."

In the report for the month of January, Mr. Allen observes,—" The fever patients received " from the Eagle, are now on recovery, and it " has nearly disappeared among her ship's com- " pany; the symptoms of those lately brought " to the hospital, are considerably milder, but " still retain the inflammatory character."

During the prevalence of this fever amongst the Eagle's men, several cases, strikingly demon-

strative of the excellent effects of early blood-letting, occurred; amongst the rest, were two officers. To the first I was called about midnight; he was aged about 36, rather of a spare habit. I found him with excruciating head-ach, chiefly referred to the forehead and temples; pains in his limbs and back, particularly the calves of the legs; eyes suffused, tongue white and furred, much thirst, skin burning hot, and the sensorium greatly disturbed. This patient had been indisposed the whole of the afternoon; but about seven in the evening he was seized with rigors, succeeded by the beforementioned symptoms, and had at first some degree of nausea. Twenty-six ounces of blood were immediately taken from the arm, and a cathartic bolus given; he was instantly relieved by the bleeding. During the remainder of the night he was restless, and the bandage came off the arm, by which means ten or twelve ounces of blood were lost. I visited my patient again at eight in the morning, and found him somewhat better, but not materially so. I ordered the cathartic to be repeated, and twenty-four ounces of blood were again drawn from the arm. The pulse after this sunk gradually to its natural standard, and the operation of the cathartic completed the cure; *at mid-day he had not a symptom of acute disease left,* and it was with difficulty I could keep him

within doors three or four days, at the end of which time he observed,—" that he was by no " means so weak as he had often been after a " common cold."

In the second case I did not see the patient till he had been ill for two or three days. I directed him to be sent to the hospital, where, by repeated bleedings, both general and local, he was a convalescent on the third day.

The Alceste frigate, and Scout sloop, had a great many of their men attacked with the same disease; in the Scout, it was attended with very considerable affection of the abdominal viscera, and frequent stools; but the early use of the lancet, joined to purgatives, and gentle diaphoretics, together with the use of the warm bath in the severer cases, soon subdued the complaint. The men of both these ships had been paid prize money, and having leave to go on shore, indulged as usual in excesses.

When I rejoined the fleet, in the latter end of February, I found them in Mahon, in the highest possible state of health; a few had suffered from pneumonia, but no epidemic of any kind had visited them.

During my absence from the fleet, the Leviathan, 74, had proceeded to Gibraltar to refit, and calling at Carthagena, took under her convoy some transports with deserters from the

French army. On their passage a fever made its appearance among these men in the transports. Mr. Stilon, assistant surgeon of the Leviathan, was sent to their assistance, who states, in the report he has made to me of this fever, that,—

" The general symptoms were shiverings, pains " in the head, back, and limbs, with inclination " to vomit; pulse about 100, but weak. On " the second day the head-ach was worse, and " pulse still remained weak. Some complained " of severe pain in the abdomen, with frequent " stools and tenesmus; these last were bled to " twenty-four ounces, and they took an ounce " of the sulphate of magnesia dissolved in wa- " ter. To those who had no pain in the abdo- " men, I gave an emetic at the beginning; but " not finding them relieved by it, and observing " that some were much better after a plentiful " hæmorrage from the nose. I determined to " use the lancet in these cases also, from which " I had been deterred by the weakness of the " pulse, and the fatigue and privations in food " and clothes, which they had lately under- " gone. I immediately had recourse to blood- " letting, with purgatives, taking at first twenty- " four ounces, which I repeated as long as " the symptoms required it: generally on the " third bleeding the pulse became stronger, and " the whole of the symptoms better. I have to

" regret the loss of three men in the Leeds
" transport, two in the Swift, and four in the
" Navigator, being precluded visiting these ships
" by the severity of the weather for four days.
" When we arrived at Gibraltar on the 15th of
" December, there were on board the different
" transports ninety-eight patients, three of
" whom died the day after. On the 18th, I
" was myself attacked with a complaint of the
" same nature, and could no longer visit the
" sick. I have been told that a great many
" died; but none of those who were bled in the
" beginning of their complaint."

While the Leviathan lay in the Mole, a considerable number of her men were attacked with fever, attended with inflammation of the abdominal viscera, and frequent bilious stools; several died, but on their having recourse to the use of the lancet and purgatives, every succeeding case did well.

The fleet resumed their station off Toulon in the month of April, and continued for some time to enjoy the best possible health; the Kent alone had any thing like fever amongst her people. She was one of our advanced ships, so that it was not in my power to visit her for some time. Several cases of fever, attended with bilious vomitings, and yellow suffusion, had occurred on board of her; one or two had died, and the same

number had become hectic. The disease had been treated by the use of emetics, bark, camphor, and wine. In the beginning of the month of July, the attacks became more numerous, and the Kent being now with the fleet, I had an opportunity frequently to visit her sick. I found the fever to assume all the usual appearances of the bilious remittent; and the use of the before-mentioned medicines being laid aside, and early evacuations, both by the lancet and purgatives, substituted, the whole of the succeeding cases, to the amount of thirty-five, speedily got well. The Kent, being the commanding officer's ship of the advanced squadron, was particularly active in watching the enemy's motions; and as several of the men who were attacked, were taken ill at the mast head, or shortly after leaving it, it is probable that atmospherical vicissitudes may have had a considerable share in producing the disease; but this is the only instance where it could not be traced, with considerable certainty, to other causes. In the remainder of the squadron, under the orders of Captain Rogers, consisting of four sail of the line and a frigate or two, not a single case occurred; the fleet were remarkably healthy. I left the fleet off Toulon in the middle of July (to proceed to Gibraltar) in excellent health: in sixteen sail of the line, and four frigates, only twelve men

being in bed, and two-thirds of that number accidents.

During my stay at Gibraltar, I made particular enquiry respecting the nature of the fever which had prevailed there in the autumn and winter preceding; and, from the accounts I received, I have every reason to think it to have been the epidemic of the season, the bilious remittent fever, as it has been called.

I was recalled to the fleet in the latter end of August, but had no opportunity of joining before October, when I found that fever had been very prevalent in the ships which had recently been in Mahon, and that the Temeraire and Invincible, then lying there, had suffered much, and disease still continued amongst them. The Kent, Centaur, Repulse, and Warspite, were the ships chiefly affected. In the Kent nine or ten men had died; in the Centaur, five or six; five in the Repulse; and one in the Warspite.

In the Kent, the treatment was by purgatives, antimony, and calomel in the beginning; mercurial inunction, camphorated julep, æther, and bark, with red wine, towards the termination.

In the Centaur, Mr. Lawson, who was surgeon of that ship, when the epidemic first commenced, states his having met with great success by the use of early evacuations.

In the Repulse, Mr. Boyd reports, that he had been very successful in combating it by the early use of the lancet and purgatives; cold and tepid affusion he likewise found serviceable as auxiliaries; but from the temperature of the body, the former was not applicable to many of the cases. In some cases, copious and sudden affusion produced a diminution of febrile heat, sweats, and a remission. In several of the patients, he mentions calomel, as having had very excellent effects. In one case of great danger, benefit appeared to be derived from the inunction of mercurial ointment on the epigastric region.*

* As I never received any specific report from Mr. Boyd relative to this disease, what is stated above is from verbal communications, and from the perusal of a paper he left in my hands for a few days. In order, however, to remove all cavil respecting this gentleman's opinion relative to the use of mercury in this fever, I have made the following extract from his Medical Journal at the Transport Office; and from a recent conversation I have had with Mr. Boyd, I have reason to believe his sentiments are still the same. After stating his general practice of evacuations, &c. he adds,—
" But where the patient was of a spare habit of body, the
" febrile symptoms seldom became so violent, consequently
" the abstraction of blood did not become necessary, and
" the disease usually yielded to the exhibition of calomel,
" from eight to ten grains, repeated every three hours, *till*
" *it moved the bowels, or affected the mouth, and as soon*
" *as either took place, the disease immediately subsided.*"

Mr. M'Leod, in his account of the fever, as it occurred on board the Warspite, says: "The "first symptoms were, for the most part, nausea, "head-ach, pain in the back and limbs, great "anxiety, and prostration of strength; skin dry, "and of a pungent heat, febrile pulse, and very "commonly a vomiting of bilious matter. The "tongue, in the first stage, white; but as the "disease advanced, yellow or brown, and ulti- "mately covered with a black crust; the eyes "and skin assumed a yellow tinge; the urine, "and even the saliva, were of a bilious hue. In "a great majority of cases, swelling and ulcer- "ation of the tonsils took place; topical in- "flammations, both erysipelatous and phlegmo- "nous, ending in abscesses, were common and "troublesome. Singultus occurred in several, "and petechiæ also appeared in one or two "cases. Irritability of stomach was in some "great, but in general not so much as is usual "in this kind of fever. The delirium has "commonly not been of the furious sort, but "rather a sullenness and stupor, with great "aversion to food and medicine; the patients "in this state, passing their fæces and urine invo- "luntarily." Mr. M'Leod then goes on to men- tion, that he treated this fever with great suc- cess by the use of cold affusion and purgatives; and in some cases, small bleedings. In the latter

cases which occurred, he, by my advice, employed the lancet a great deal more freely, after which he had no more abscesses, or erysipelatous inflammation, and the recovery was much hastened.

The same kind of fever had prevailed in a few of the ships the preceding summer; the Leviathan was one of the number, and Mr. Griffiths, the surgeon, in an interesting and valuable report he has made to me on the occasion, observes,—" It is necessary to state, that the Le- " viathan put into Port Mahon on the 4th, and " sailed from thence on the 18th of August fol- " lowing; during this period the crew were ne- " cessarily obliged to work severely in refitting " the ship, under a temperature, varying from " 78 to 82 degrees. It was also the daily prac- " tice to send a party of marines on shore, for " the purpose of brooming. The disease, gene- " rally preceded by costiveness, in most in- " stances commenced with lipothimia, when the " victims suddenly fell down with a giddiness, " and the pulse could scarcely be felt. This state " was of short duration, and was succeeded " by horripillation, though the skin to the " touch was intensely hot; pain in the fore part " of the head, and throbbing of the temporal " and carotid arteries; while the pulse at the " wrist had a wiry smallness, and was not parti-

" cularly accelerated. In a few hours the eyes " appeared suffused, with turgescence of their " vessels; tongue white, excessive thirst, and " great anxiety: these were the symptoms with " which they were attacked primarily. Those " who did not apply till the second or third day " from the attack exhibited a yellow suffused state " of the eyes, which soon spread to every other " part of the body; they had head-ach, brown " furred tongue, dullness of intellect, and were " with difficulty induced to answer questions put " to them; they had great prostration of " strength, and pains in various parts. On the " fifth day, there was great dysuria in some, and " complete suppression of urine in others; then " a coma, or rather a carus supervened. If the " disease was not followed by a remission on " the seventh or ninth day, it put on the great- " est malignity; and in two cases that termi- " nated fatally, they died on the ninth. Eight " others underwent the violent form of the di- " sease; were deeply tinged with bilious suffu- " sion; were all delirious; had a favourable " crisis on the 9th, 11th, and 14th days, and " finally recovered after a very tedious convales- " cence.

" Never having before observed this fever, " and dreading the debility that was apparent in " the above cited cases, I trusted the cure at the

" commencement to emetics eccoprotic, and " diaphoretic medicines; and to the employment " of blisters, bark, wine, opium, and spruce in " the advanced period; and it was not till ob- " serving in one violent and protracted case, the " immediate relief from head-ach, and a very " evident remission in the fever, obtained from " a very copious and repeated epistaxis, that I " began the use of the lancet.* In about forty " subsequent cases, which had all primarily " the same set of symptoms (differing only in " the deviation induced by idiosyncracy) blood " was drawn, and in some to a great extent, " with decided advantage; and but for this eva- " cuation, I am confident the fever would have " gone through all the stages it did in the first " ten affected. By blood-letting and purga- " tives, a remission was generally obtained on " the third, and the febrile state rarely ex- " tended to the fifth day. In some, the relief " produced by the evacuation of eighteen or

* Hæmorrhages of the nose (says Cleghorn) are often of signal service in removing the obstinate head-achs and pains in the *abdominal viscera*, whether they are *e directo* or not; though, for the most part, they happen from the nostril of that side in which the pains are fixed; for which reason they ought not to be hastily stopped, unless they continue too long, or come at a time of great weakness.

" twenty ounces of blood, was immediate, and " many were discharged to duty within twenty- " four hours from the attack.

" My observations on the causes of this fever " already stated, occurred to me only when the " effects of evacuations were manifest. In the " first ten men no blood was evacuated; in con- " sequence the fever progresively advanced, " marked with symptoms of malignity and pu- " trescence, the result of high excitement during " the synochal period of the disease. In the suc- " ceeding forty cases, where blood was drawn, " the complaint was extinguished on or before " the fifth day, and no very bad symptoms ap- " peared."

But to return to the fever of 1811:—the ships already mentioned had again proceeded to sea,* and their health was soon restored.

The Temeraire and Invincible still remained in harbour, and the disease continuing to extend itself in both ships, the inhabitants became alarmed; and the Junta of Health having made several visits, declared that it was the same fever which had committed such ravages in Cadiz, Malaga, &c. and both ships were placed by the Spanish authorities in strict quarantine. They

* The Repulse, Kent, Centaur, and Warspite.

suffered so much from the disease, as to be rendered totally ineffective for several months. The first account I received of this fever, was a very interesting one from my friend, Dr. Ross, who was passenger on board the Temeraire, in Mahon, waiting to join his own ship; and is as follows:

"The fever, as I have witnessed it in the transports, is ushered in by rigours, succeeded by heat of skin, violent head-ach; in some very marked determination to the brain, such as redness of the eyes; while in others, who had not this exterior mark of inflammation, the patient complained of a weight in his head, and severe pain about the orbits. In most of them there was considerable irritability of stomach; but I did not witness the black vomiting, except in one case,* the mate of the St. Andrew transport, who died about the fourteenth day; owing to the negligence of his attendants, I could not succeed in seeing his stools, which they stated to be black, very fetid, and bloody: nor could I ascertain, during the latter stage of his illness, whether he voided urine, a suppression of which, I believe gene-

* The *black vomit*, though a frequent, is not an uniform symptom in the fevers of the Mediterranean, or even of the West Indies.

" rally takes place previous to the fatal termina-
" tion of the yellow fever. For about three
" days previous to the death of the mate of the
" St. Andrew, he was affected with constant
" singultus, and his skin began to assume a
" *much deeper yellow hue,* symptoms of which
" had existed several days before he came under
" my care; delirium then also took place, and a
" few hours previous to death, hæmorrhage
" from the nose.

" Though I did not witness this case at its
" commencement, I am particular in endeavour-
" ing to describe it to you, from a conviction of
" its similarity to the other fatal cases which
" have occurred on board the Temeraire and
" Invincible, an account of which you will of
" course receive from the surgeons of these
" ships.

" On my coming into the Temeraire, Mr. Mor-
" gan invited me to go and see his patients, a
" number of whom were labouring under violent
" head-ach, and difficult respiration. I most de-
" cidedly advised him to bleed, and that profusely
" too, without delay; a mode of practice which,
" though averse to it at first, he afterwards *in a*
" *few cases, in some measure adopted;* and the
" good effects of which, when employed early,
" were too apparent not to strike conviction.
" Mr. Morgan's patients were, soon after I first

" saw them, sent to the hospital, and I had not " an opportunity of witnessing the further pro- " gress of the disease, *which in a number, in- " deed generally, was of a mild nature.* Mr. " Morgan's practice seemed to me to consist " chiefly in the use of calomel and antimony, " four grains of the former and three of the lat- " ter every fourth hour. The Temeraire has " now (25th of September) lost about seven men, " and the Invincible about the same number; " but, from what I can learn, there are at least " twenty dangerously ill at the hospital. Out of " between twenty and thirty ill in the transports, " three, whose blood I have not been sparing " of, are still in danger. Strong doses of calo- " mel and jalap, and, in some instances, anti- " mony, are the only medicines I have employed. " Mr. Morgan is of opinion, that this fever has " not the least resemblance to the yellow fever " which he has witnessed in the West Indies; " but on comparing the symptoms with that de- " scribed by Dr. Rush, as it occurred at Phila- " delphia in 1793, and which is called by him " the bilious remittent, a great similarity will be " perceived; that, in the present instance, is " much more mild, and in general not so rapid " in its progress; *and yet, I believe, even here, " some have died as early as the second, third, " or fourth day.*"

On the 5th of October, two days before I arrived at Mahon from the fleet, Dr. Ross, in a note of that date, informs me, that,—"Mr. Morgan has had a severe attack of fever, and from "feeling the good effects of this practice on his "own person, has been a complete convert to it; "after five bleedings, the fever in him was cut "short on the second day. Lieutenant Hooper "was completely relieved from fever by the abstraction of twenty-two ounces of blood from "the temporal artery; and he himself positively "believes that it saved his life. But I need not "mention any more instances to prove the good "effects of a practice so well known to you. "The number of sick from the Temeraire at "the hospital is one hundred and thirty-six; "the total number of deaths amounts to twenty. "What number the Invincible has lost I have "not been able to ascertain."

I lost no time in going to the hospital, after my arrival at Minorca, on the 7th of October, and I cannot better describe the state in which I found the sick, than by the following extract of my report to the Commander in Chief on the occasion.

"On visiting the hospital I found twelve or "fourteen men in bed, two of that number "with dysentery, and the remainder in a state "of great debility from fever; but in whom the

"acute stage of the disease had passed. The "total number ill is one hundred and thirty-three "from the Temeraire, and one hundred and "seven from the Invincible. The others are in "different stages of convalescence, with great "disposition to relapse; particularly the Invin- "cible's men, who are extremely extenuated, "and, I fear, many of them will be a considera- "ble time before they recover their strength."

On making enquiry as to the method of treatment which had been pursued with those men, I found it to have been by the use of emetics, calomel, antimony, bark, and wine, in large quantities, with full meals of animal food from the beginning.* Bleeding, it was said, had been tried and failed; *But after the most minute enquiry, I could only find, that out of the whole of the Invincible's men who were ill, three only had been bled once, and that one out of that number had died.* In the Temeraire, where the same line of practice had been pursued, I could only learn that some had been bled, and that some had died; but what quantity of blood had been taken, or at what period of the disease, I could obtain no information. Some cases occurred

* I have still in my possession the official return of the victualling of the Invincible's men, which will fully prove this.

after this which were, by my directions, freely evacuated; one to the amount of 140 ounces of blood. The whole soon recovered and returned to duty before many of the others, who had been six or seven weeks under cure.

After several visitations to the hospital, I soon saw, that though the acute stage of the disease had passed, we had yet a very serious enemy to encounter; and I am sorry to say, my predictions have been but too well verified.* In the mean time, as the failure of evacuations in the early stage of the fever of this country was a circumstance I could not easily think correct; and, as Dr. Ross had been on the spot the greater part of the time, I wrote a note to him, as he was then in quarantine on board the Temeraire, to know exactly the circumstances, as far as they were within his knowledge, and he replied as follows:—

"I am this moment favoured with your communication respecting the fever which has "lately been so prevalent here; and I am not "a little astonished, that the evacuating plan, "the superiority of which I had proved by the "strongest of all arguments, *facts*, has not

* The patients were constantly relapsing; several as frequently as three times, most of them once, and some of them were daily attacked with dysentery.

"been adopted at the hospital." Dr. Ross then repeats what is mentioned in the former letter respecting the symptoms, and goes on by saying,— "The practice of blood-letting in the early "stage of this fever, *has never been carried to "its full extent in the Temeraire, except in "those cases, of which I had myself the treat-"ment, during the surgeon's illness, and none "of these were sent to the hospital*; for the dis-"ease was in the first instance cut short, as can "be proved by the testimony of the assistant sur-"geon on board, who, during his uncle's illness "bled liberally at the commencement of the dis-"ease, and now declares openly,—"*that no "treatment but the abstraction of blood was of "any avail.*" The Junior Mr. Morgan's note to Dr. Ross, on this occosion, is as follows :—

"In complying with your request, I have "to regret the smallness of the number; how-"ever, they will suffice to prove the grand effect "of the bleeding plan (when taken in time) "which you so judiciously and successfully "adopted in the late epidemic. I shall attempt "to state the most striking and particular symp-"toms, which justified me in adopting the "bleeding plan. The cases are five in num-"ber, and were attacked in the following man-"ner: violent head-ach, turgescence of the eyes, "pulse quick and hard, throbbing of the tem-

" poral arteries, the tongue white and dry, with " preternatural heat of skin, &c. The five " men before mentioned, were instantly bled " on their first attack, and that copiously too, " which rendered it unnecessary to have further " recourse to the lancet, and gave them imme- " diate relief; afterwards they took cathartics, " and, in two or three days, their fever was at " an end."

After my arrival, few fresh cases occurred; but there were many relapses, and several were attacked with dysentery.

On the 22d of October, the hospital was allowed pratique, and I had a better opportunity of ascertaining the actual state of the patients in it. I found the sick belonging to the Invincible and Temeraire in a worse condition than I had reason to believe.

In the Invincible, out of eighty cases in the hospital, ten only were fit for duty. Six had dysentery, which had originally accompanied the attack of fever, thirty-one had dysentery, which had succeeded the attack of fever, and there were thirty-three convalescents, in a very debilitated state, and frequently relapsing. The Temeraire's, who were more numerous, bore a like proportion; and some afterwards died of dysentery under the care of Dr. Ross, whom the Commander in Chief appointed to the charge of

the temporary hospital. This fever commenced in these ships in the latter end of August, and in December, at least one hundred and twenty from the two ships, were still in the hospital. Such was the effect of the remedies and plan of treatment which had been followed.

The account of the disease, as it appeared amongst the Temeraire's men, at the hospital, is given by Mr. Rudland, then assistant surgeon, as follows:—

"The patient was generally attacked with "lassitude, cold shiverings, pain in the head, "back and extremities, succeeded by great "heat, anxiety, and prostration of strength. "The attack was sometimes accompanied by "bilious diarrhœa; oftener with constipation "of the bowels. For the first two or three "days, the remissions were generally very dis- "tinct; the pulse, during the paroxysm, from "115 to 135; the heat of skin intense, with "thirst and restlessness; white tongue, and "red or watery eyes. From the commence- "ment of the remission, the pulse gradually "decreased in frequency, sometimes to its na- "tural standard; the heat and thirst became less, "the paroxysm often terminating in a short "sleep, with a gentle diaphoresis, followed by a "copious discharge of limpid urine. As the "disease advanced, the remissions became less

" distinct, or not at all apparent; and, in some
" cases, very little remission could be observed
" from the commencement of the disease. On
" the third, fourth, and fifth days, the eyes
" and tongue became yellow, which gradually
" extended over the whole surface of the body
" and extremities, accompanied with coma,
" quick weak pulse, low delirium, and great
" prostration of strength. As the disease pro-
" ceeded, the coma and debility rapidly in-
" creased, the tongue became brown, the eyes
" assumed a darker yellow, and glassy appear-
" ance, with oppression at the præcordia, and
" difficulty of breathing. In several cases that
" proved fatal, hæmorrhages took place on the
" sixth or seventh day, and, sometimes, at a
" later period, from the nose, mouth, anus, and
" urethra. As the disease further advanced, the
" tongue, lips, and teeth, became black and
" furred; the former, when put out, trembling,
" and was not withdrawn, unless the patient
" were desired to do it. Extreme restlessness
" now took place, with quick, weak, trembling,
" or intermitting pulse; black and highly fetid
" stools, with offensive breath; hiccough, subsul-
" tus tendinum, followed by involuntary eva-
" cuations of the urine and fæces, which con-
" tinued for twenty-four hours, or longer, if

" the patient in the meantime were not taken
" off by convulsions.

" In two cases, which proved fatal, a swell-
" ing of the parotids took place, and vibices
" appeared upon the extremities.

" Except in two patients, who recovered, no
" particular irritability of stomach could be dis-
" covered; vomiting very seldom took place,
" the stomach in general retaining every thing
" till within a few hours of death."*

The following is the account given by the assistant surgeon of the Invincible:—

" This fever was ushered in with cold or shi-
" vering, followed by heat, quick pulse, great
" thirst, pains all over the body, particularly
" severe across the forehead; great weight and
" oppression of the præcordia, accompanied
" with bilious vomiting, in some with white and
" furred tongue, which, when put out, had a
" tremulous kind of motion; in others, it com-
" menced with a slight bowel complaint. The
" urine in general was high coloured; and the
" stools, in colour, resembled mercurial oint-
" ment. The eyes, in a few, appeared in-
" flamed, and painful on motion; delirium be-

* I have not myself seen a case which proved fatal after the fifth day, wherein vomiting did not take place.

" gan sometimes on the first or second day, or " later; yellow tinge generally about the third " or fourth day, and shewed itself first in the " conjunctiva. Singultus was a very common, " but not fatal symptom; irritability of stomach " not very prominent, it appeared but in few. " Remissions in some strongly marked; after " the third or fourth day symptoms of debility " made their appearance, and increased rapidly. " The first thing done, in almost every case, " was to clear the primæ viæ by an emetic and " cathartic, and, afterwards, to exhibit calomel, " so as to keep the bowels open, and bring the " system under its influence. Bark and wine " were given to support the patient, and when " the remissions were marked, in considerable " doses. Of all those who died, not one of their " mouths was affected by mercury.* For topical " affections, blisters were generally employed. " It seemed to affect the young and plethoric " more than others."

I have thus endeavoured to collect all the information I could respecting the nature and treatment of this fever, as its subsequent consequences

* When I visited the sick of the Invincible, I do not recollect seeing more than one patient, whose mouth was affected with mercury, and he was taken ill after my arrival, and had been largely bled.

have been almost as distressing as its immediate effects.

The Temeraire sailed from Mahon for England on the 25th of December; and, when she arrived, upwards of twenty men, who had had this fever, were invalided. She was, soon afterwards, put out of commission, and her men turned over to the Union; from whence, many under the same circumstances were invalided. This ship afterwards proceeded to the Mediterranean; and, since her arrival on this station, nearly twenty of her men, who had been sufferers from fever the preceding year, have been sent home consumptive, or with visceral obstructions; so that, on a common calculation, this fever cost the Temeraire's ship's company at least eighty men, comprising deaths and invalidings.

About the time this fever was so prevalent at Mahon, several of the ships at Malta had a like visitation; and it was there treated by Mr. Allen, surgeon of the hospital, and by the surgeon of the Weazle, with a success and propriety that have never been exceeded, and are well worthy of record.

In the months of April and May, fever to a considerable extent prevailed amongst the prisoners of war, lately arrived from Gibraltar. They had been some time embarked, and had

reached the place abovementioned, on their way to England, but were ordered to return.

Mr. Allen, in his report of this fever, says,— "The disease was ushered in by cold shivering, "head-ach, pains across the epigastric region, "loins and limbs, constituting nearly the symp- "toms of the epidemic of this island. Bleed- "ing, open bowels, blisters, and determining "to the surface, constituted our practice, with "great attention to personal cleanliness."

It appears by Mr. Allen's official reports, that during this time, two hundred and fourteen cases of fever were under his care, of which number, fourteen only have died.—

Towards the latter end of June, fever began to make its appearance amongst the Pomone's ship's company, in the harbour; she was refitting at the dock-yard. The following were the symptoms, as described by Mr. Allen:

"Violent head-ach, watery suffusion of the "eyes, severe pain across the epigastric region "and loins, attended with pains in the limbs, "nausea, and vomiting; pulse full and fre- "quent; tongue furred, with constipation. "One of these men had been three days ill, "and when received, was tinged with a deep "yellow suffusion; had singultus, and his "pulse much sunk: he died the second day "after his admission into the hospital. Another

" died two hours after being received; I think " from effusion on the brain. He had com- " plained in the morning, and had all the symp- " toms of this fever, but not violent. The head " and liver seemed to be the principal parts " affected in this fever. The forehead, and " frontal muscles were, in some cases, swelled " and painful. The Weazle sloop, refitting at " the dock-yard, has also sent us about thirty, " with similar symptoms to the Pomone's; and " the surgeons of these ships have very pro- " perly sent their men to the hospital the mo- " ment they were seized.

" Our method of cure has been, in the first " instance, by the abstraction of thirty ounces " of blood, the exhibition of a cathartic, and a " bolus composed of calomel and antimonial " powder, of each two grains, twice in the day; " the mist: salina, or julep: ammon: acetat:— " in the evening, the bleeding, if necessary, " was repeated. Next day, if the symptoms " required it, recourse was again had to the " abstraction of blood, a blister applied to the " epigastric region, and the febrifuge medi- " cines were continued. By this treatment the " fever was, in most cases, subdued in three or " four days. When the febrile symptoms were " longer protracted, we carried our bleedings " as far as seven or eight pounds, with emi-

" nent advantage. During the cure, the whole " of the antiphlogistic plan was strictly en- " forced.

" In several of these patients I found bleed- " ing with leeches, at the temples, attended " with great and immediate relief.

" I consider this fever to have been brought " on by intemperance and exposure to heat, " constituting the bilious, or yellow fever of " the island. It is not contagious.

" These two ships were rich with prize-money, " and the seamen, &c. consequently irregular."

During the month of July, fever still continued to prevail amongst the Weazle's crew, and eighty-five patients, labouring under that disease, were sent to the hospital. Mr. Allen, in his report for July, states.—" That the dis- " ease and treatment continued the same; and, " owing to the very judicious practice of Mr. " Wardlaw, surgeon of the Weazle, by the " early use of the lancet, on the first appear- " ance of fever, before they were sent to the " hospital, and sending them immediately after, " the disease was soon checked, and seldom as- " sumed a serious aspect. Not one has died of " fever during the month (one hundred and " thirty-one were received, two hundred and " twenty-three were discharged cured!!) When " patients, afflicted with this fever, were left

" without medical aid, which was the case in " one or two instances, *they became deeply* " *tinged yellow; the fever was long protracted,* " *and extreme debility succeeded; but when* " *early bleeding was resorted to, it completely* " *prevented those symptoms.*"

Mr. Wardlaw, whose judgment and success stand equally conspicuous, reports :—

" The state of the weather for these six weeks " past has been extremely warm; the thermo- " meter ranging from eighty to eighty-seven, " in the shade. The Weazle arrived at Malta " in the month of June, and went up to the " dock-yard to refit, and the ship's company " were then perfectly healthy. Liberty being " given to go on shore; and they having re- " ceived a considerable sum of prize-money, " intemperance was the consequence; and, next " day, while very much debilitated, their duty " necessarily exposed them to the heat of the sun. " Fever began to make its appearance on the " 28th of June. The symptoms of this fever " were severe head-ach, nausea, and vomiting " of a bilious matter; great prostration of " strength, bowels costive, pulse full and strong, " eyes suffused, with dilated pupils; thirst ur- " gent, tongue dry, and loaded; with severe " pain, and tightness across the breast. One " or two dropped down in a state of insensibi-

" lity. On the first attack, I took away imme-
" diately from twenty-four to thirty ounces of
" blood; saline draughts were administered in
" a state of effervescence, and directly the vo-
" miting ceased; one ounce and a half of the
" sulphate of soda, dissolved in a pint of bar-
" ley-water, was given in divided doses, till the
" whole was taken; the mist: salina tertia
" quaque hora, and a bolus of calomel and an-
" timonial powder, of each two grains, twice a
" day, till the mouth was slightly affected, ge-
" nerally completed the cure. The liver and
" brain seemed to be the only organs affected;
" the liver from obstructed ducts, and the brain
" from the great determination of blood to it.
" Topical blood-letting by leeches, was of
" great use. Between the 28th of June, and
" 20th of July, no less than eighty-nine cases
" of fever were sent to the hospital. I re-
" moved them on shore as early as possible, but
" took care to bleed and administer a cathartic
" as soon as the patient complained."

The success attending the exertions of these gentlemen has never been surpassed in the history of fever, and is a striking example of what promptness and ability will do in the cure of this devastating disease. More than nine tenths of these men had returned to their duty

within a month, and the remainder soon followed.

In the month of September following, the same disease made its appearance amongst the Trident's (guard-ship) crew, and extended to about thirty of them: the symptoms and treatment were similar, and the only person who died was the first lieutenant, who, for the first five days, would not suffer himself to be bled, and died the same day he was received into the hospital.

In the latter end of October the fleet came into Port Mahon, to complete their water and provisions, and to refit, having met with very boisterous and unsettled weather. Some cases of fever appeared amongst them, but were speedily subdued by the early use of the lancet and purgatives. They sailed again in the middle of November, and remained at sea for a month; during which time, several of the ships had a few of their men attacked with the same kind of fever as had lately been so prevalent; but the same practice was attended with a like success. Occasional sporadic cases also occurred in some of the ships in the harbour.

The fleet finally returned for the winter, about the middle of December, in excellent health, with the exception of a few cases of pneumo-

nia. This continued till the end of February, when I left Mahon to proceed to Malta, to inspect the establishments and ships there. During March nothing of any moment in the medical department there occurred; but, about the 1st of April, a fever made its appearance on board the Trident, and extended to one hundred and four of her crew: it soon also appeared in the Victorious, lately returned from the Adriatic, to refit, after her action with, and capture of, the Rivoli; and several sporadic cases were received from the other ships in the harbour.

In the Victorious, sixty cases of fever occurred; thirty-four were sent to the hospital, and four died: the remainder were speedily cured on board, and at the hospital, by the active and judicious treatment of my excellent friend, Mr. Allen, and Mr. Baird, surgeon of the Victorious. Of those who died, two had been in a state of great intoxication on shore for some days previous, and, when received into the hospital, might be said to be apoplectic, and were evidently lost cases, though every thing that could have been done to save them was already put in execution by Mr. Baird. A third had the severest pneumonic symptoms I ever witnessed; the cause of which, examination after

death, readily explained. Of the fourth, I have no memorandum to guide me.

Out of one hundred and four from the Trident, only one died!* Mr. Allen, in his report on this occasion, says:—

"You, Sir, have been an eye witness to the "practice of the hospital; and having detailed "the symptoms and treatment extensively in "former reports, I can add little more, than "that I am, if possible, more than ever con- "vinced of the beneficial effects resulting from "early and repeated bleeding, both from the "temporal artery and arm. In the cases which "terminated fataly, death was always preceded "by violent delirium and coma; the stomach "sympathizing with the highly inflamed state of "the brain, lungs, and liver.† I have found the "greatest advantage from the application of "blisters to the head, breast, and epigastric "region."

Between the 1st of April and 23d of May, one hundred and fifty-three cases of fever had been received under Mr. Allen's care; one hundred

* These men were sent to the hospital the moment they complained.

† This was uniformly found to be the case on dissection.

and twenty-four had been discharged, eight died, and twenty-one were convalescent in the hospital, all rapidly recovering, except one, who appeared to have effusion on the brain, and had hemiplegia. Here was no dysentery, no consumption, no visceral obstruction; the judgment, the attention of Mr. Allen, prevented all this, and returned them to their ships, without an ache, in the most perfect health. Nothing could be more gratifying than to visit Mr. Allen's wards, where every thing was in the highest order, and where a regular succession of grateful convalescents, immediately met the eye; each advanced in recovery according to the length of time he had the benefit of his assistance in the hospital. Many of the patients, who were labouring under the severest head-ach, with great apparent prostration of strength, were instantly relieved by the abstraction of thirty ounces of blood from the temporal artery; and many exclaimed while the blood was yet flowing,—"Sir, I am as strong as ever; I am "quite well; I feel the pain running out with "the blood." And so sensible were they of this, that on a recurrence of head-ach, they directly sent for the assistant-surgeon, to have more blood taken from them.

On my return to Port Mahon, in June, I found

that fever had begun to make its appearance on board the Rodney, then lying in that harbour. It commenced two days before my arrival, and I was just in time to direct the proper practice. Dr. Ross had left the hospital, a surgeon having arrived from England in the hospital ship. Emetics, and camphorated julep, with antimony, were the order of the day; but I directed the practice to be laid aside.

The fever was, in itself, particularly mild, as is usual at this season; and the surgeon of the Rodney, Mr. Girvan, with his assistants, assiduously executed my directions; indeed, so much so, that but few patients sent to the hospital, required a second bleeding.

The same disease occurred on board the Rainbow; and Mr. Lawson, who was formerly one of my hospital mates in England, and who was also serving as surgeon of the Centaur, when the epidemic prevailed on board that ship the preceding year, left little for them to do at the hospital, by pursuing the evacuating system with judgment.

In the months of August and September, the weather was oppressively hot, with southerly, or south-easterly winds, and several severe cases of fever were received from the transports employed as cattle ships, and a few from the men

of war that occasionally came in to refit. In these cases bleeding was not at all practised, or very sparingly.

Towards the middle of October, I took upon myself the charge of the physical patients in the hospital. They continued under my care from this time to the 12th of December, when the surgeon, who was then appointed to the hospital, took charge of them.

During the time abovementioned, eighty-two cases of fever came under my care, the worst I had as yet seen; some of them requiring the most prompt exertions. Out of this number four died: three of these were lost cases before I saw them; the fourth died from inflammation of the brain. Several of these mens' cases, with the dissections of those who died, will be found amongst the rest.

From this period, down to the end of the year, nothing of moment occurred at Mahon.

At Malta, the Trident had another visitation of fever; twenty-six cases were placed under Mr. Allen's care, which he treated with his usual judgment and success, not one man dying.

In the month of October, the Ajax, lying in Palermo Bay, had many of her men attacked with fever. Mr. Shand's very interesting report is as follows; and speaks so much for itself, that any observation from me would be super-

fluous. The Ajax had hitherto been one of the most healthy ships of the fleet.

" The most prominent feature in this dis-
" ease, and most uniformly complained of, was
" the violence of the head-ach immediately over
" the eye-brows, with giddiness, and more or
" less confusion of intellect. In some, the face
" was pale and deadly, the features contracted
" and shrunk; the eyes appeared dull and
" heavy, and hollow in their sockets; in others,
" there were flushings of the face, redness of
" the eyes, with delirium; great irritability of
" stomach prevailed, with nausea, violent retch-
" ing and vomiting. The patient complained
" of severe pains of his back and loins; but
" more particularly his limbs, which were often
" tottering under him. Debility, with great
" prostration of strength, were the immediate
" consequence of the attack, which, in most
" cases, was sudden and entirely unexpected;
" the bowels were commonly irregular, some-
" times constipated, and at others open; but
" stools in general deficient in bile. The tongue
" in most cases, was natural; but in several,
" white and dry, with an angry redness of its
" sides; in some, inclined to be brown, but
" never black till the later periods of the dis-
" ease. The pulse, in the more violent cases,
" was quick, feeble, and frequently intermit-

" ting; in the milder, from its healthy stand-
" ard, to a great degree of quickness: in some,
" it was full and quick; in others, small and
" contracted; in short, in a majority of cases,
" the pulse indicated nothing. Towards its ge-
" neral termination in the ship, the symptoms
" abovementioned became less distinct, and
" seemed to give way to an affection of the
" chest, assuming the appearance of inflam-
" mation of the lungs, such as pain of the side
" (stitch), with short dry cough, and difficult
" breathing; quick and full pulse, and dry skin.
" The brain appeared to be the first organ affect-
" ed, and the consequences were a little varied
" according to circumstances: in several of the
" cases, the persons complained of great and
" general uneasiness over the whole body: they
" could state no individual part more painful
" than another; the most distressing oppression
" and anxiety pervaded their whole frame, and
" their looks indicated the severest anguish;
" their pulse was feeble, and scarcely to be felt;
" and such was their situation, that, to all ap-
" pearance, the interposition of medical aid
" could not long avert the hand of death. The
" heat of skin during the whole disease was
" little altered, never varying above two degrees
" either way.

" In the first cases that made their appear-

" ance, the symptoms were very suspicious,
" assuming the character of the typhus mitior;
" for instance, lassitude and languor, debility
" and prostration of strength, slight irritability
" of the stomach, pulse small and quick, tongue
" dry and brown. I must confess that this in-
" sidious mode of attack, threw me off my
" guard, as to its real nature, for it seized those
" who were labouring under previous disease
" and debility at the same time, and which
" were combated by remedies usually employed
" on such occasions. Notwithstanding the nature
" of the disease as it at this period appeared, the
" remedies employed succeeded in three cases,
" and failed in two; but other appearances
" soon succeeded, which released us from all
" uncertainty as to its real nature, and a
" more decided and prompt practice was
" adopted. The recollection, Sir, of your
" successful treatment at Forton and Mahon,
" supported me in my plans, and rewarded me
" in my practice.

" The alarming symptoms which I have de-
" tailed, immediately gave way to liberal and
" copious bleedings. The patient, who came
" in supported, or carried by men, after the
" abstraction of twenty ounces of blood, rose up
" and walked, wondering at his relief. Venæsec-
" tion was the sovereign and speedy remedy in

" alleviating their sufferings, producing a per-
" fect remission in twenty-four hours; the blood
" always exibiting strong inflammatory marks.

" In a majority of cases, two copious bleed-
" ings, with the administration of a saline
" purge, sufficed in removing the immediate
" danger. The moment the pulse became re-
" gular, with freedom from head-ach, which
" was the great point to be attained, the bark
" was liberally given; and, I assure you, Sir,
" the most severe cases returned to their duty at
" the expiration of a few days."

Mr. Shand then goes on to mention, that in some protracted cases, advantage was derived from alterative doses of calomel; and that the infusion of quassia produced an excellent effect as a tonic. He also observes, *that many, who were labouring under venereal disease, and whose systems were completely under the influence of mercury, were attacked with the same fever.*

In a subsequent report from Mr. Shand for the month of December, I was informed,—"That
" the same fever, with equal severity, but not
" to such an extent, and combined with another
" disease of as dangerous a tendency (pneumo-
" nia), still continued to prevail, notwithstand-
" ing the unremitting attention of the captain
" and officers to every thing that could contri-
" bute to the health and comfort of the crew."

He then proceeds as follows:—" The present " re-appearance of this fever differs little from " what I detailed to you, in a former report, " only it is not so sudden in its attack, and " far more men complain of pulmonic affections. " In some cases the remissions were very dis- " tinct, with apparent freedom from complaint; " but this was of short duration, the violent " pain in the forehead soon succeeded, with " debility and sympathetic affection of other " parts, but particularly the stomach. In others " it was far more insidious, with general op- " pression, lassitude, and languor; the pulse " was small, and oftentimes natural; the tongue " clean; bowels open, and skin cool; yet " there was an uneasiness pervading the whole " frame, which they felt, but could not de- " scribe, and which was evident in the eye, be- " ing dull and heavy, and more or less distress " marked the features. Many of them were " attacked with symptoms of pneumonia, and " severe pain of the forehead; all ushered in " by the usual transitions of a paroxysm of in- " termittent fever.

" With respect to the treatment, little need " be said; bleeding, in its early period, was our " sovereign remedy—our great dependence and " hope, and one which never disappointed or " deceived us. In consequence of the *strong*

" *inflammatory diathesis* it became necessary " to be more cautious in the administration of " bark; and where a tonic was required, I " found the quassia, with a portion of ginger, " an excellent one."

Febrile diseases still continued to prevail in the Ajax during the succeeding months of January and February, which Mr. Shand treated with his usual ability and success. In the month of February, he observes, "In one case of a " strong and vigorous man, in the bloom of " health and strength, I was obliged to carry " bleeding further than I had ever done before; " but, the most pleasing result was the conse- " quence: the perfect suspension of a disease, " which otherwise, from its severity and vio- " lence, was rapidly undermining his constitu- " tion, and flying to a fatal termination: in the " course of eight days, he lost upwards of " fifteen pounds of blood from the arm and " temporal artery. I have now much pleasure " in observing his rapid and daily approaches to " his wonted state of health." Mr. Shand does not mention whether this was a case of fever or pneumonia, and there are several classed under each of these heads in the reports.

In the months of January, February, and March, 1813, a fever made its appearance on board the Tremendous, lying in Mahon, and

extended to upwards of ninety of her ship's company: the appearances were such as commonly mark the progress of fever at this season, viz. severe pulmonic affection, joined to the usual symptoms of the fever of the country. In some, the vomiting was excessive, and in most it was attended with great irritability of stomach.

Mr. Donald, surgeon of that ship, treated it with great success by evacuations in the early stage, and only three out of the whole died. About twenty of the severest cases were sent under Mr. Boyd's care to the Naval Hospital, who was alike fortunate in his treatment. Mr. Donald, in his Medical Report for the month of March, gives the following interesting account of this disease.

"They complained at first of cold shivering "and severe head-ach, with general pains, but "more particularly in the breast and loins; "pulse generally from 90 to 100, and full; "skin hot and dry; sometimes the pulse was "more frequent, even to 150 in the minute, "small and firm; attended with less heat of "surface, but great oppression at the breast, "and much anxiety; tongue white, considerable thirst, face flushed, eyes red and painful, "belly generally costive, frequently inflammation and swelling of the tonsils.

"Blood was freely drawn in the first in-

" stance, according to the urgency of the symp-
" toms, at the same time were given repeated
" purgatives of the neutral salts, or calomel and
" jalap combined; saline draughts, with anti-
" monials and calomel in the evening. When
" there was much determination to the head,
" bleeding from the temporal artery was at-
" tended with excellent effect, as well as sha-
" ving and blistering the head.

" As the disease advanced, the tongue became
" brown and rough, the yellow suffusion took
" place all over the body, with stupor, delirium,
" and singultus. Blisters were applied to the
" breast repeatedly, and likewise to the head,
" apparently with good effect; at the same time
" keeping the bowels open. In some instances,
" an almost incessant vomiting of bile-like
" matter occurred, attended with obstinate cos-
" tiveness; sometimes in less than twenty-four
" hours, but generally later, the pulse was fee-
" ble and frequent, and in some cases reckoned
" with difficulty; the skin rather cool, with
" clammy sweats, and much dejection. Saline
" effervescing draughts, with a few drops of
" tinct: opii: frequently repeated, and the appli-
" cation of a large blister to the region of the
" stomach, were the remedies which gave most
" relief."

It has been difficult to trace the cause of this

disease appearing in the Tremendous at this rather unusual season of the year; and it is only by reviewing her progress in the Mediterranean, that I am at all enabled to throw even a probable light on the subject. The Tremendous sailed from Spithead on the 15th of August, with the flag of Vice-Admiral Sir Sydney Smith, and, on her way to join the fleet, she visited several of the Spanish Ports within the Mediterranean, and on the 13th of September, arrived at Carthagena, where fever to a very considerable extent prevailed, both amongst the inhabitants, and in the British troops who were in garrison there, and many deaths occurred. The Tremendous, during her stay at Carthagena, lay in Escombrera Bay, and the intercourse with the city was very limited. She remained there till the 24th. The Leyden troop ship, with part of the 67th regiment on board, lay in the bay, and *both ship's companies* were exceedingly healthy during their continuance there. The only person who was soon attacked with fever was an officer of the Tremendous,* who had been much exposed to the sun, and the influence

* He felt a slight head-ach on the 29th of September, but was not seriously ill till the 4th of October; after which, for a very long period, he was subject to the attacks of a quartan ague.

of the marshes surrounding Carthagena, from being on shore; and he had a pretty severe attack shortly after they joined the fleet off Toulon, which was within a period of ten days after their intercourse with Carthagena. The Tremendous was in Mahon for a few days, and when the fleet returned to that harbour for the winter, she, together with the Repulse, remained to cruize off Toulon, where they continued till the end of November. After the arrival of the Tremendous at Mahon in November, a long series of wet weather was experienced; which, joined to the usual excesses the sailors have an opportunity of indulging in at this time of the year, may be fairly allowed as powerfully exciting causes in men, who in all likelihood were predisposed to an attack of fever, from their exposure to the miasma at Carthagena during the autumn. The period of time from the exposure to the appearance of the fever is certainly considerable; but the dear-bought experience of the Walcheren Expedition, has taught us that it is no less possible: and another circumstance which strongly confirms me in this opinion, is, that the Leyden, which while in Carthagena Bay was perfectly healthy, on going to Gibraltar, and possibly experiencing the same exciting causes, suffered in like manner; but, from having a much smaller ship's

company, not to such an extent. I have no report from her surgeon; but I observe, by the returns of Gibraltar Hospital, that several of her men had died with a similar fever.

During the time this disease was so prevalent in the Tremendous, the most unrestricted intercourse was allowed with her; yet not one man in any of the ships of the fleet was taken ill in consequence of it, and ships lying within less than two cables length of her were totally exempt from it.

The ships of the fleet generally suffered, as is usual during the winter, from pulmonic inflammation, which, wherever free evacuation was had recourse to in the beginning, terminated favourably.

The ships at Malta suffered less than usual from fever this season, the Alcmene alone having any considerable number attacked with it. She had lately returned from the Adriatic to refit, and during her stay at Malta, had landed several men with fever at the Naval Hospital. She sailed from Malta on the 29th of January, as the surgeon reports, "with but few sick. "A short time after sailing, however, some "cases of violent fever occurred, which daily "increased in number, so that on the 7th "of February there were nearly forty men af-"fected by it, twenty-five of whom were so ill

" as to be confined to bed." There being only one medical attendant on board, (Dr. Arnold, the surgeon) it was at one time in contemplation to have returned to port. Dr. Arnold adds, " I had the satisfaction of finding, however, " that the very vigorous practice I employed at " the commencement of the complaint, had " even more than the *expected* good effect; " some cases, which at the commencement portended the greatest danger, were so far obviated as to be convalescent on the third or " fourth day from the attack, which fortunate " circumstance was the occasion of the ship's " continuing at sea."

Though I had no doubt in my own mind, as to the method of practice he had pursued, (as I am assured there is only one which could have produced such a result) I wrote to Dr. Arnold, requesting he would state to me more fully, the symptoms and treatment of the disease, which he very obligingly did. The former I found so perfectly similar to those I have so frequently detailed, that it is quite unnecessary to repeat them here; and the practice fully corresponded with my own, except that antimonials (from the absence of the extreme irritability of stomach, which characterizes this fever in the warmer seasons of the year) were more generally given. Nothing remains for me to add, but that, out

of nearly fifty cases, not a man died; and the greater part returned to their duty in less than a month.*

As the spring advanced, slight cases of fever, attended in some instances with manifest determination to the brain, and in others with pulmonic inflammation, prevailed in several of the ships of the fleet; and often, in these cases, the brain was materially affected, accompanied by a slight yellow suffusion. Some of the cases required active depletory treatment, which was attended with its usual salutary effects; but in general they were very slight, yielding to the operation of purgatives, succeeded by small doses of antimony and saline julep, together with confinement, and a reduced diet.

Towards the end of May, cases of the summer fever occurred in some of the ships, but they were only numerous at this time in the Bombay of 74 guns. This ship had been anchored close to the Arsenal, during the greater part of the winter and spring preceding, and was then remarkably healthy; she sailed with the fleet on the 10th of April from Mahon, and con-

* Dr. Arnold has detailed one very severe case, in which he found it necessary to take away blood to the amount of 193 ounces, before he subdued the excessive action; — the man was at his duty in three weeks.

tinued at sea till the 23d of May following. For about a fortnight before she sailed, the weather had become very warm, and the marshy ground at the head of the harbour, and that part left uncovered by the sea, emitted unpleasant exhalations, which appear to have had a very delcterious influence on the health of her crew, *for she was the only ship of the whole fleet, who did not at this time enjoy the best possible state of health.*

" For many months previous to the ap-
" pearance of this fever" (says Mr. Rudland the Surgeon, in a well written and accurate report he has made of the disease) "the ship's company
" were very healthy, a few cases of pneumonia
" upon any sudden change of the weather,
" trifling accidents, and other incidental com-
" plaints, forming the whole of our sick list,
" which was seldom above eight or ten.

" On the 23d of May we bore up with the
" fleet for Mahon, and on the 25th, the morning
" of our appearance off that port, fifteen men
" were seized (some of them very suddenly) with
" pyrexia, severe griping pain in the bowels,
" nausea, pain of the head and extremities,
" thirst, heat and lassitude.

" In some cases these symptoms were preceded
" by cold rigors, alternating with flushings of
" the face and head; but at this time with little
" evident determination to that organ.

" Between the 25th and 30th twenty more " were added to the list, but in these the features " of the epidemic had in some measure changed, " the determination to the intestines, being no " longer so marked, although still present in " several cases. The symptoms became more " inflammatory, with greater affection of the " head, evinced by a full throbbing pulse, " flushed face, watery eyes, turgid with blood, " or tinged yellow; the heat was more intense, " with throbbing of the temporal arteries, and " great irritability of stomach, nausea, and " vomiting. In many of these cases, the pain " of the head was very severe, shooting across " the temples, sometimes accompanied by slight " delirium, and a peculiar stupid countenance, " great lassitude and vertigo, particularly on " attempting to walk. In one or two instances " great delirum prevailed, and it was with some " difficulty the patients were quietly secured for " the purpose of being bled. The pulse was " generally from 100 to 130 in a minute, but in " some cases not more than 80, small and hard, " and having the peculiar feel of an oppressed " pulse; here the irritability of stomach was " very great, attended with severe retching, " without any evacuation from that viscus, and " it was only where the retching had continued " some time that any bilious matter was ejected.

" The irritability of the stomach appeared to " be in proportion to the determination to the " brain, and not depending on any crudities in " the primæ viæ; it increased with each acces- " sion of pyrexia, when this was accompanied " by any determination to the head, and did " not subside till this was relieved by copious " bleeding. The general effects of this evacu- " ation (particularly when employed early) were " a dimunition of heat and anxiety, a cessation " of delirium, a more cheerful countenance, " alleviation, if not a total removal, of the " vomiting, the pulse decreasing in hardness " and frequency, an universal diaphoresis, and, " in short, a remission of all the most evident " symptoms.

" In some cases where the symptoms did not " at first indicate the use of the lancet, and in " several where the patients neglected to apply " for assistance, I have been obliged to have " recourse to it at a more advanced period, " and with evident good effect; but in these " the evacuation of blood, was not attended " with that immediate relief, so strikingly evi- " dent when it was had recourse to at the com- " mencement of the disease, before the morbid " action had exhausted the system by repeated " paroxysms.

" In several cases where the first attack was

" pretty severe, the early loss of thirty or forty " ounces of blood, with a brisk cathartic, have " entirely removed all symptoms of disease; " and a few days abstinence from animal food " and fermented liquors, were alone necessary " for the final re-establishment of health.

" In most of the cases, the irritability of " stomach was so great, that no medicine could " be retained if given previously to the bleeding; " that operation generally relieved the sickness " and retching, and enabled the patient to bear " the repetition of the necessary cathartics. " The stools had commonly a dark bilious ap- " pearance. In several cases where the heat, " thirst, and dryness of the skin remained after " evacuations had been used, and the symptoms " did not then appear to indicate further deple- " tion, the cold affusion was had recourse to " with considerable advantage; but, in general, " the remission effected by the evacuations was " so complete, as to render the application of " it unnecessary.

" In those cases where great irritability of " stomach remained after the evacuations, " (which, however, seldom happened when they " were had recourse to early) the application of " a blister to the region of the stomach has af- " forded considerable relief.

" Since the 25th of May, upwards of one

" hundred persons have been attacked with this
" fever, of whom six only remain on the list,
" and are in a convalescent state; one was left
" at the hospital, where he was recovering, and
" all the rest have returned to their duty.
" H. M. S. Bombay, July 4th."

In the month of June, the same fever appeared on board the Berwick, which ship remained at that time about a fortnight in Mahon, anchored above the Hospital Island, and her men employed in unloading prizes. It extended to upwards of forty of her crew, and though generally mild, was in some cases very severe. The surgeon, Mr. Craigie, treated his patients with attention and ability, and the ship was soon restored to health. This gentleman's report is as follows :—

" The fever which has prevailed on board
" the Berwick, made its appearance on the eve
" of her departure from Mahon, about the
" beginning of the month: the only exciting
" causes which could be assigned, were hard la-
" bour on board of prizes at sea and in harbour
" during the three preceding weeks, with some
" opportunities of indulging in the use of in-
" toxicating liquors. The weather, during our
" stay in harbour, was generally hot and sultry,
" with heavy dews at night. The greatest at-
" tention was paid to every thing that could
" affect the health of the ship's company, and

" the ship's broadside was kept to the wind; in " hot and sultry nights the lower deck ports " were only sloped, to keep up a circulation of " air. The disease, in the first instance, at- " tacked the patients suddenly, with great pros- " tration of strength; violent head-ach soon " appeared, with universal pains, soreness of " the limbs and loins, and a flushed counte- " nance; suffusion of the eyes was a very gene- " ral concomitant when the head-ach was severe.

" In two or three of the worst cases, a re- " markable anxiety and inquietude was denoted " by the state of the countenance, from the " commencement, with trembling of the extre- " mities.

" Several complained of soreness of the throat, " with difficult deglutition; indeed the disease, " in some instances, could not be distinguished " from catarrh, except in its greater violence; " the slighter cases of this description, only " required attention to diet, a saline purgative, " and small doses of antimony at bed-time.

" The bowels were, with one exception, " always costive, and required repeated cathar- " tics.

" The tongue was always white, as the dis- " ease advanced, parched, and, in the worst " cases, together with the lips and gums, was " covered with a black tenacious fur. There

" was little or no variety in the state of the " pulse; it was always rapid, full and strong, " in proportion to the violence of the other " symptoms.

" The cure, when the nature of the disease " was ascertained, was begun by washing the " patient, and then, according to the severity of " the symptoms, particularly the head-ach, he " was bled either from the arm or temporal " artery; the latter method was found most " beneficial, and was generally preferred when " the head-ach was urgent. *The benefit derived* " *from blood-letting was often instantaneous,* " *and was always followed by an alleviation of* " *the most distressing symptoms, such as head-* " *ach; even during the flow of the blood, the* " *patients used to express their great relief.*

" A saline or mercurial cathartic was given " as soon as possible, and repeated until copious " evacuations were procured. Repeated venæ- " section, and the daily use of purgatives, were " the means relied on for a cure, and seldom " failed. The common saline julep was of ser- " vice in allaying thirst and restraining vomit- " ing, which were sometimes troublesome."

Only one man out of the whole died.

The fleet was now, and had been from the end of May, off Toulon, and from the excellent arrangements of Sir Edward Pellew, (now Lord

Exmouth) the Commander in Chief, frequent supplies of fresh meat and vegetables were distributed; and, with the exception of occasional sporadic cases of fever, enjoyed a favourable state of health. In Mahon the ships were far more healthy than usual, and when the disease did appear in any of them, it was of a milder nature; indeed in some it was merely *ephemeral.* This healthy state, appeared to be principally occasioned by the short time they had remained in the harbour, their anchoring below Hospital Island, and the unusual coolness of the weather.

Still however, the ships which had occasion to refit, had several of their men taken ill, and though the cases were not so numerous, there were some very severe attacks amongst them.

In the Armada nearly thirty men were taken ill, and about half that number in the Scipion; in both which ships they were treated with equal judgment and success.

In the former, Mr. Delaney reports the symptoms to have been, "intense heat, severe pain "of the head, particularly referred to the fore-"head, intolerance of light, depression of "strength and spirits, pain in the epigastric "region, and in a majority of cases, dyspnœa "and cough; the stomach was but little affected

" except in one case; in four, the kidneys " seemed to partake of the inflammation, *but* " *universally the brain appeared to be the pri-* " *mary and principal seat of the disease.* Bleed- " ing, purging, and the application of conduc- " tors for the immense quantity of caloric gene- " rated, were the means used for their cure." Mr. Delaney mentions that benefit was derived from the use of calomel and blisters, and adds, " Bleeding, however, was the remedy chiefly " relied on, and the result has been such as to " confirm and increase my confidence in its " safety and utility, I believe, I may say neces- " sity; for though I have seen fevers, appa- " rently consisting in inflammatory action of " the vessels of the brain, cured without bleed- " ing, I have also painfully witnessed the num- " ber of invalids sent home from this country " by such a practice. *

" In these fevers the first bleeding was car- " ried on till stopped by approaching deliquium, " when in a few minutes the nausea and faint- " ness ceased; the patient was always stronger, " and the pulse fuller than before the bleeding.

* I have often myself seen in cases which had been treated improperly, *sequelæ*, similar to those which followed the Walcheren fever.

" The first bleeding was generally followed, " in less than twenty minutes, by sweating and " a remission ; the second never failed to pro- " ducé a remission, and the afternoon of the " third day was in general free from fever."

In the Scipion the disease presented no new features; but a relapse in the case of Mr. Young, a midshipman, was highly interesting. He had suffered a pretty severe attack, and speedily got the better of his illness by a prompt use of evacuations ; but having something preying on his mind, he relapsed during his convalescence. When I visited him, he had been several days confined to his bed, and lay in a comatose state ; his pupils were dilated, and he was not at all roused by the examination of his eyes, nor could we obtain any answer to questions put to him; but Mr. Rodmell informed me, that he had replied to his questions in the morning ; his pulse was somewhat round, but oppressed, and not exceeding 100 ; there was increased action in the temporal and carotid arteries, his breathing was a little laborious, and he had but slight increase of heat.

I advised the application of leeches to the temples, the exhibition of a brisk cathartic, composed of calomel and jalap, and the application of a large blister to the head; the cathartic to be aided in due time by enemas.

These means were put in execution; on the following morning he was a convalescent, having experienced the most marked relief from the leeches and cathartic; he left his bed on the third day, and recovered from that time rapidly.

The fleet now occupied an anchorage off the mouth of the Rhone, where they lay six weeks, obtaining plentiful supplies of water, and continuing in a very healthy state, in which they remained up to the 16th of October, the period of my leaving them to return to England.

GIBRALTAR AND CARTHAGENA

FEVERS.

IT is universally allowed, that the summer of 1804 was one of greatly increased heat throughout Spain, and fever was more generally prevalent than it had hitherto been. The disease first made its appearance in Gibraltar, towards the end of August, or beginning of September; it had been preceded by a long course of extremely hot weather and easterly winds. The cases were at first slight, but the malady soon assumed a far more serious form, committed dreadful ravages, and finally terminated about the end of December.

The population of Gibraltar at this time, including the military, was estimated at about fourteen thousand souls;* of this number, during the prevalence of the epidemic, five thousand

* Sir James Fellowes, who had good means of judging, estimates the population at 10,000, including the garrison.

nine hundred and forty-six died; viz. officers 54; soldiers 864; soldier's wives and children, 164; inhabitants, 4864; being upwards of two-fifths of the whole population. The greatest mortality was on the 9th of October, on which day 170 died.

Imported contagion has, by many, been assigned as the origin of this devastating disease, and has as generally been believed, but without sufficient grounds: by others, it has been considered of domestic origin, which the facts lately brought before the public by Dr. Bancroft, tend greatly to confirm.

Fevers of the same nature have invariably been prevalent in Gibraltar during the autumnal months; and I well remember, when there in October and November 1799, that several of the Goliath's ship's company were taken ill, and shewed symptoms precisely similar to those I witnessed the succeeding year on board the Diadem, in Mahon. My friend, Mr. Gardiner, who has been nearly ten years surgeon of the Naval Hospital at Gibraltar, assures me, that fever always shews itself, *more or less*, in the garrison, during the autumnal months, and particularly so when the rains are slight, and succeeded by hot weather.

Without, at this time, entering into an examination of the causes of this disease, I shall proceed

to lay before the reader two interesting papers, written by gentlemen who were engaged in the scenes they describe. The first was lately sent to me from Gibraltar; the second Mr. Griffiths kindly drew up at my request. They convey a tolerably accurate account of the symptoms, and also of the general practice in the treatment of this fever.

" * The disease generally comes on like other " fevers, with a slight head-ach, chilliness and " shivering, sometimes sickness at stomach; " pulse from 100 to 130: these symptoms are, " in a few hours, followed by violent pain in " the head, *confined chiefly to the eye-balls and* " *forehead,* back and calves of the legs; *the face* " *becomes flushed, and the eyes have a shining* " *and watery appearance, with a slight degree* " *of inflammation, like those of a person half* " *drunk;* the skin dry, the bowels in general " bound, tongue foul, with a considerable de- " gree of thirst.

" This is most commonly the first stage of " the disease; but sometimes the patient is seized " in a moment with the violent head-ach, pain " of the back, and the greatest debility, from " being apparently in the most perfect health.

* This is Mr. Pym's account of the disease and treatment in 1804.

" In general, when I am called in, in the early " stage of the disease, I order an emetic of an- " timon: tartarizat: or ipecac: that is, when " the patient has sickness at stomach, or an " inclination to vomit, which generally pro- " duces perspiration, and sometimes opens the " bowels also; if it does not, a gentle purga- " tive must be given. When there is no sick- " ness at stomach, I generally order a purga- " tive, such as salts, cremor: tartar: or ca- " lomel and jalap, with an injection to hasten " its operation; when this has operated three " or four times, I order small doses of James's " powder, such as $\frac{1}{2}$ gr: every two hours, to " produce or encourage perspiration, which, " with the assistance of cooling drinks, and oc- " casional blisters to the forehead and tem- " ples, and nape of the neck, put an end to " the disease *about the third day;* when the pa- " tient must be supported with broths, wine, " and jellies, given in small quantities, and " frequently repeated; at the same time keep- " ing the bowels regular, and giving occasion- " ally small quantities of infusion of bark.

" This is the termination of what we call a " mild attack; *but, in many cases, the patient* " *goes on thus for four, or perhaps to the fifth* " *day, without any bad symptoms,* when his " pulse suddenly sinks, his eyes become yellow,

" bleeding takes place from the nose, mouth,
" bowels, and sometimes even from the eyes; his
" neck and arms are covered with small dark
" coloured spots; there is no secretion or excre-
" tion of urine; a vomiting of a black matter,
" like coffee grounds, comes on, with an uneasi-
" ness in the chest, and difficulty of breath-
" ing, which puts an end to the disease, as you
" may suppose, about the fifth or seventh day.
" In this last case, we have been very seldom
" successful; bark, in different forms, has been
" used with stimulants, such as wine, brandy
" and water, lavender drops, with hot fo-
" mentations to the loins and region of the
" bladder, also rubbing the loins with hot
" brandy.

" *In some cases,* the patient is seized from
" almost the first moment of his attack, with de-
" lirium and vomiting, which soon terminates in
" what is called the black vomit, and death
" takes place on the second or third day. In
" this case, blisters to the head, mustard to
" the feet, keeping the bowels open by glysters,
" and giving the saline mixture, or any cooling
" drink, in very small quantities, has sometimes
" proved successful; and when the fever goes
" off, the greatest care is necessary to counter-
" act the debility, as all the convalescents are
" liable to faint upon the smallest exertion,

" even upon sitting up in bed; this is best done " by the different preparations of the bark, " and humouring the patient with any kind of " food that is most agreeable, in small quanti- " ties at a time, and frequently repeated.

" *The most characteristic symptom of the* " *disease is the peculiar pain in the forehead* " *and eye-balls, with the drunken appearance* " *of the eye.*

" In the after stages, it is known, when " too late, by the black vomiting, suppression " of urine, hiccough, yellow skin, with small " purple or blackish spots, chiefly on the neck " and arms; any one of which symptoms, ex- " cepting the yellow and spotted skin, is gene- " rally looked upon as fatal. The black vomit- " ing has been cured, in some instances, by " only wetting the patient's mouth with drink, " and giving repeated injections of cold chicken " broth, without salt; and, in one case, the " patient was cured by drinking capillaire and " water only. The want of secretion of urine, " is, I believe, always fatal. The hiccough has " been got the better of by ten drops of lauda- " num, and twenty of æther, given every two " hours, for eight or ten hours."

Mr. Griffiths's Account of the Fever at Gibraltar in 1804, *addressed to me, is as follows:*

H.M.S. Leviathan, April 14, 1813.

" Sir,

" I am under the necessity of giving " you the following account of the fever which " prevailed at Gibraltar in 1804, in a very im- " perfect and unconnected manner; as, in the " absence of documents, my remembrance, in " so long a period, must of course be very faint.

" I cannot take upon me to be precise in " point of date, but I think the disease was con- " sidered in its infancy in the beginning of Sep- " tember; the symptoms were then mild, reco- " veries frequent, and death seldom happened " before the 7th, 9th, or 11th day.

" In a medical consultation, held about this " time, for the purpose of enquiring into the " nature of the fever, it was declared to be the " usual remittent, incident to the inhabitants of " the place, at the same season; but deaths be- " coming more frequent than at any other of its " former visits, this opinion was soon relin- " quished, and the disease announced to be " contagious, and of the same type with that " which was then prevailing at Malaga.

" During the greater part of September, the

" Triumph, of which ship I was then surgeon,
" was at Cadiz, where the same fever was also
" commencing; and, upon my return to Gib-
" raltar in October, I found the daily mortality
" greatly increased; averaging from sixty to
" seventy.

" The disease, at this time, had assumed a
" very aggravated form, often terminating fa-
" tally in forty-eight hours.

" I find it impossible to relate exactly the
" symptoms which occurred in those attacked on
" shore, in consequence of the desultory man-
" ner I was obliged to attend them; but the
" following cases happening on board the Tri-
" umph, afforded me more leisure to observe
" the progress of the disease.

" Mr. L————, was an officer of marines
" on half-pay, and had attempted to establish
" himself in business at Barcelona, in connec-
" tion with a firm in England; but failing, he
" came to Cadiz, and was granted a passage on
" board the Triumph, for himself, wife, and
" six small children. For more than a week he
" appeared to have no other complaint than ex-
" treme despondence, arising from his distressed
" condition. This, probably, predisposed him to
" the attack of the reigning epidemic; upon the
" appearance of which, he was immediately re-
" moved to a transport lying in the bay; where

" I attended him. His symptoms were, as nearly
" as I can recollect, as follows :—
" First stage,—Dejection, slight rigours, las-
" situde, and sensation of fatigue; giddiness,
" and pain of the head, with a sense of cold-
" ness along the course of the medulla spinalis;
" tremulous white tongue, ferrety red eyes, and
" a small, frequent, and somewhat hard pulse.
" Second stage.—Aberration of the intellect,
" faultering speech, anxiety, and a counte-
" nance expressive of much anguish. Third
" and last stage, excessive heat of skin, com-
" municating to the touch the calor mor-
" dens, extreme prostration of strength, tongue
" swollen, hard, and dry; teeth covered with a
" black crust, hot and fetid breath, yellow-
" ness of the skin, and incessant vomiting;
" a sunken and intermitting pulse, black
" stools, singultus, and death within thirty-six
" hours."

" A seaman, who had escaped from a French
" prison, had travelled through Spain, and ar-
" riving near Gibraltar, was refused admit-
" tance into the garrison, and ordered to per-
" form quarantine in an open boat on the neu-
" tral ground, whither he had his provisions
" daily sent to him.

" After having undergone the necessary pro-
" bation, he was taken on board the Triumph,
" was fresh clothed, and every prophylactic em-
" ployed that could ensure his safety from dis-
" ease. He continued in good health and spi-
" rits for more than a fortnight, when he was
" attacked in the same manner as the forego-
" ing case, with this difference, that there was
" no yellow suffusion of the skin; and that
" petechiæ and vibices covered the whole body,
" a few seconds before death, which did not
" take place till the fifth or sixth day.

" With respect to the treatment, my memory
" goes only to state in a general way, *that in*
" *the beginning of September the complaint*
" *was evidently considered inflammatory, and*
" *many recovered under an evacuating treat-*
" *ment;* but, as the number of sick increased,
" and the disorder put on an early aggravated
" form, the depletory system was entirely laid
" aside; but I cannot take upon me to state
" what mode was substituted. I believe, how-
" ever, that nothing availed; all seemed horror
" and confusion towards the end of October,
" when the efforts of the medical practitioners
" were principally directed to prevent the dis-
" ease extending.

" Though I went with the stream of those
" who thought the disease contagious, and eva-

" cuations injurious, subsequent reflection, and " a more correct knowledge of the pathology of " the disease than I at that time possessed, con- " vinces me, that in its outset it was highly in- " flammatory.

" I have been told, that in the treatment of " the sick of one of the regiments (I believe " De Rolls) blood-letting was never had re- " course to; that even purgatives were admi- " nistered with caution, that cold affusion and " antimonial emetics were solely confided in, " and that the mortality in that regiment was " conspicuously great.

" Mr. Burd, the surgeon of the Naval Hos- " pital, was the only person whom I recollect " to have carried on the system of evacuation " extensively; and, though the prejudice against " his practice was great, yet I remember, in a " conversation I had with him; he mentioned " many instances of its success."

From this period till the autumn of 1810, Gibraltar continued healthy; in the month of September this year several transports, having on board deserters from the French army, arrived from Carthagena, under convoy of his majesty's ship Imperieuse. Amongst these deserters a fever had appeared of which some died. They were put under strict quarantine, and a medical attendant, having been sent from the shore, was himself taken ill.

About this time between two and three hundred men arrived in a frigate from England, for the purpose of manning a flotilla, and were put on board the San Juan lying in the Mole, and many were in a short time attacked with fever; the particulars of which, as reported to me, will be found at page 138.

A short time after these men were sent from the San Juan, Mrs. Vaughan, wife of the commissioner's clerk, was attacked with a fever, having symptoms similar to the yellow fever of the West Indies, and died on the seventh day of her illness, with black vomiting and yellow suffusion. This lady was attended by Mr. Donnet, of the Naval Hospital, on the last day of her life; *and so decidedly did he consider her case, as resembling the epidemics which have committed such dreadful ravages in Spain and Gibraltar, that he immediately reported it to* Mr. Pym, *then Senior Medical Officer of the Garrison.* — Vide his letter in the appendix.

In the early part of October, several persons residing on shore, were attacked with a fever which manifested very dangerous symptoms, and it appears by the statement of Mr. Waters, assistant surgeon of the 7th Veteran Battalion, that one of the soldiers of that regiment was taken ill in their barrack, situated in the town, on the 11th of this month, and a second on the

19th following; and the disease subsequently extended to thirteen of that corps. Towards the end of the month some persons living in the south, more particularly in the neighbourhood of a place called Scud Hill, were likewise attacked with a fever, said to be of a suspicious nature, which was afterwards denominated the "Bulam," and considered by *some* to be the same fever which had prevailed in 1804.

Mr. Kidston, surgeon of this regiment, favoured me, on the application of Mr. Gardiner, with the following outlines.

"The first symptoms of the fever, which "made its appearance in the Seventh Veteran "Battalion, in this garrison, in October, 1810, "were shiverings, succeeded by heat, acute "pain across the forehead, sometimes extending "over the whole head, pain in the back and "loins, great oppression at the breast, pulse "quick and full, tongue covered with a black "or brown crust, eyes red. On the second "day the patient felt easier, the breast and "arms were covered with livid blotches, and "sometimes the vomiting of a fluid, with a "sediment resembling coffee grounds. Death "generally succeeded in a few hours afterwards. "The medicines found to give most relief, were "antimon: tartarizat: calomel, and opium."

About the same time that I received the fore-

going brief statement of this disease, the following, which had been transmitted from Mr. Pym, deputy inspector of hospitals, to Sir Richard Keats, K.B. commanding the squadron at Cadiz, was forwarded to me by my friend Dr. Risk, surgeon of the ship.

" In reply to your letter of this morning, I " beg leave to inform you, that in my opinion " the fever, which prevails on board the trans- " ports from Carthagena, *is the contagious* " *fever of the West Indies, known by the name* " *of the Bulam fever,* from its having been im- " ported from that settlement to the island of " Grenada, in the year 1798. *It is the same* " *disease which prevailed in Spain in the years* " 1800 *and* 1803, *and at Gibraltar in* 1804. " Its most violent mode of attack is shivering, " with excruciating head-ach, confined chiefly " to the forehead; pains in the back and calves " of the legs; the skin becomes burning hot, " and the eyes have the appearance of a person " intoxicated; the pulse beats from 100 to 110; " then follows thirst, with pain in the region of " the stomach; no drink can be retained; there " is an almost constant vomiting, at first of bi- " lious matter; but about the second day, what " is brought up is mixed with a substance re- " sembling coffee grounds; attended with cold " extremities, clammy perspiration, and relief

" from pain; a few hours after which, death " generally ensues. In this violent attack, the " disease terminates on or before the third " day, and is seldom extended to the fifth. " Hæmorrhage from the nose, mouth, and bow- " els is also a very common symptom, with " yellowness of skin.

" *Sometimes the disease is very mild, and* " *seems to be cut short by the operation of an* " *emetic or purgative.* The disease differs very " materially from the bilious or yellow fever, " which is common in this country during the " summer months; this last is not contagious, " the pulse is often slower than natural. It is " generally attended with inflammation of the " liver; is relieved by bleeding, and seldom " runs its course before eight or nine days.

" The first is contagious; the pulse is very " quick; it does not bear bleeding; generally " terminates before the fifth day, and is very " often attended with the most fatal symptom of " black vomiting."

The number who were attacked with this disease in the garrison amounted to thirty-eight, of whom twenty-three died.

In the month of September, 1804, a fever of a very alarming nature made its appearance in Carthagena; which, about the middle of October, or rather towards the end, was consi-

dered at its height; and it was not until the end of January 1805, that it totally ceased. During the prevalence of this malady, twenty thousand souls perished out of a population of about thirty-four thousand.

In 1810 the epidemic re-appeared in this city, carrying off a fourth part of the inhabitants in the course of six weeks or two months.

In the succeeding years, 1811 and 1812, Carthagena was again visited by this devastating disease, and many fell victims to it.

In the month of February 1811, a British garrison had arrived in Carthagena, which, during the prevalence of the epidemic, I understood had suffered much. Conceiving that from this source I might obtain some satisfactory information respecting the fever, which had become the more interesting, from its being considered of the same nature as that which had committed such ravages at Gibraltar, and several other cities in the South of Spain, I obtained the Commander in Chief's permission for that purpose, and embraced the earliest opportunity of proceeding thither; arriving in the beginning of April, where I met with the most hospitable and kind reception from Colonel Prevost of the 67th Regiment, then commanding the garrison, and derived from him much useful information relative to the object of my

enquiries. I was, however, disappointed in that which I hoped to obtain from other quarters. From Don Juan Riseuno, physician of the Spanish Royal Hospital, I received the politest attention, and every information in his power.

Before proceeding with the history of this disease, it will be interesting to take a view of the *medical topography* of the place, which will greatly assist in the future consideration of its nature and causes.

Carthagena is situated at the bottom of a deep bay close to the sea; and several parts of the city are built on the declivities of small hills, enclosed within the walls of the garrison. It is protected to the south-west by high mountains; but to the north-east it is open, and communicates with an extensive valley.

About a mile and a half to the north-east of the city, there is a considerable rising of the ground (where some windmills are erected) which gradually slopes towards Carthagena; in the intervening space is situated an extensive marsh, which was formerly covered by the sea, containing several hundred acres, surrounding, as it were, the whole land-face of the city, in many places approaching within a few yards of the walls. This marsh is, in many places, intersected by ditches, which were made some time ago, with a view to drain it; but which,

however, was not persevered in. Proceeding from the marsh, there is a ditch, which passes close to the walls, through a deep ravine between the castles of Galleras and Attaleya, and empties itself into the sea at the distance of about two miles. The mountain of Galleras, on which stands the castle of the same name, is situated to the south-west of the city, at the distance of about six-tenths of a mile, and is upwards of seven hundred feet above the level of the sea. Immediately at the foot of this mountain, and between it and the city, is the Naval Arsenal, occupying the whole intervening space, in which there is a bason, capable of containing thirty sail of the line, with suitable magazines for their stores. Nearest to the base of Galleras, and immediately under the road leading up to the castle, are situated the *mast ponds*, which occupy a large space; these originally had a free communication with the adjoining bason; but this is now almost destroyed; and, as they have not been cleaned out for these last twenty years, the water they contain is green and stagnant; and in the summer they emit a most offensive effluvia.

The whole, or greater part of the houses in the arsenal, are built on *made ground*, formed from the earth, &c. dug up in constructing the bason. The scite of the arsenal was formerly

covered by the sea. The ascent to the fortress, on the summit of Galleras, is by a zig-zag road, which, as I have before noticed, is immediately over the mast ponds. On this road, about half way up the mountain, are two small barracks, which were occupied by detachments of the 67th Regiment.

To the north-west of Galleras, about the distance of shell range, separated by a deep ravine, and on a mountain of more elevation, stands the castle of Attaleya. To the south and east of the city, at the distance of a mile and a quarter, is the mountain called San Julian, about 800 feet in height above the level of the sea. On the summit of this mountain the late Major-General Ross caused a work to be erected. The streets of Carthagena are tolerably wide and clean. During the summer and autumnal months, regular sea and land winds prevail.

I could obtain no accurate account of the daily height of the thermometer; but was informed, that in August and September, it generally stood at eighty-five degrees of Fahrenheit in the shade.

The seasons at Carthagena in their course appear, from the accounts I received, to be conformable to those generally experienced in the Mediterranean; the warm weather commencing in May and June, increasing in July, August,

and September; continuing often during October, and, sometimes, for a week or so in November, and remaining temperate through the winter. The heavy rains fall commonly in September, with thunder storms.

The 2nd battalion of the 67th Regiment, under the command of Colonel Prevost, after having been nearly two years at Cadiz, arrived at Carthagena, in excellent health, in the month of February 1811. About the middle of July some slight cases of fever occurred, both amongst the troops and inhabitants; but it was not until August had somewhat advanced, that any alarm took place.

In the beginning of August, the 67th Regiment embarked to join the Alicant army, where, however, they continued but a very short time, and returned to garrison Carthagena. During their absence, fever had continued to increase in the town, and some of their wives and children, who had been left behind on their sailing for Alicant, had fallen victims to it.

In consequence of these events, the whole of the regiment was not landed; *but detachments occupied the castle of Galleras, and the barracks on the road;* about two hundred were encamped at the foot of St. Julian, who were employed to work on the battery constructing on its summit;

the remainder were on board the Leyden troop ship, at anchor in the bay.

The fever first began to shew itself amongst the men quartered in the *small barracks on the road leading up to Galleras*, and it soon extended to the castle, sparing no one. The general, who resided there, was, amongst others, taken ill, and died. The disease continued to increase, and almost every officer and man quartered in Galleras, or in the barracks leading up to it, were taken ill: the inhabitants suffered in the city equally with our troops. It was not the 67th Regiment alone which felt its ravages, but the Royal Artillery, and a foreign regiment experienced also a loss in proportion to their numbers quartered in Galleras.

While disease continued to prevail to so alarming an extent in this part of the garrison, the men encamped under San Julian, although they ascended it twice a day to work, continued exempt, notwithstanding they suffered considerable fatigue, and were necessarily much exposed to a scorching sun. Not a man there was attacked with fever during the continuance of the epidemic.

In the castle of Attaleya the troops were remarkably healthy, only two or three very slight cases occurring.

Men on board the Leyden, to the amount of

upwards of forty, *who had been on shore,* were taken ill; *but in no instance was the disease communicated to any of the other soldiers on board, or to any of the ship's company of the Leyden; not a case appearing amongst them.*

The number attacked on shore amounted to about two hundred and fifty, and of these about seventy died. Thirty were invalided with chronic diseases, the consequence of the preceding attack of fever; and when I visited Carthagena, two still remained in the regimental hospital, one far advanced in ascites, the other much reduced from repeated attacks of intermittent fever; to which many of the officers and men, who had suffered from the epidemic, were still particularly subject.*

The symptoms did not differ from those described by Dr. Riseuno, in his account of the disease amongst the military and inhabitants; *the severe head-ach, with inflammatory suffused appearance of the eyes, were very conspicuous;* many of the cases were slight, and soon put on an intermittent form.

With respect to the treatment, I could obtain no very satisfactory information; but I under-

* Shortly after this regiment joined the Alicant army a second time (May 1813); they had upwards of 100 men and officers ill with intermittent fever.

stood, that amongst the medical men a considerable diversity of opinion prevailed. At one time emetics, bark, and brandy, were relied on; at others, calomel, in considerable doses, had the preference. I learned from Colonel Prevost, that one man of the 67th regiment had been bled largely from the temporal artery, and soon recovered. Mr. Brown, Deputy Inspector of Hospitals with the army at Alicant, informed me, that it had been reported to him by an hospital mate, who was stationed at Carthagena during the time the epidemic raged, "that every "patient who came under his care, on being "first attacked, and was bled largely, reco-"vered." With respect to the morbid appearances, my information is equally deficient.

Mr. Rae, Surgeon of the Leyden, transmitted me the following interesting account of this disease, as it appeared amongst the troops remaining on board that ship, who (from the medical officers of the army having full employment on shore) were left under his care.

"From the month of June 1812, in which "the Leyden arrived in the Mediterranean, little "sickness occurred on board, or any cases "worthy of notice, until our arrival at Cartha-"gena, in the end of August following, with "the 67th regiment; all of whom were detained "on board, in consequence of an epidemic, *or*

" *what is there termed the yellow fever,* having
" broke out in the town and suburbs. From a
" want of medical men to attend detachments
" on shore, the charge of those on board de-
" volved upon me; in consequence of which, I
" had an opportunity of observing the said
" fever in all its stages.

" As we unavoidably had communication with
" some of the out-posts, several of those em-
" ployed on that duty brought the complaint on
" board, *to the number of about fifty,* all of
" whom, with the exception of one officer whose
" case was complex, recovered.* By the free
" use of the lancet, opening the temporal ar-
" tery, antimonials, sometimes mercurials, re-
" frigerants, &c. remissions were procured, after
" which bark completed the cure. *I do not*
" *think it is contagious; otherwise it is hardly*
" *possible that the men constantly on board*
" *would not have suffered, while unavoidably*
" *exposed to those who brought it from the*
" *shore.* I considered it merely as a violent
" remittent, and the remote cause, marsh mi-
" asma, arising from an extensive marsh with
" which the city is almost surrounded; and
" where not only a putrefactive process of vege-

* This officer's case will be found in the Appendix.

" table, but also of animal matter, is constantly " going on. During a period of nearly four " months which we lay at this place, our ship's " company were always in a tolerable state of " health, and no deaths occurred, except such " as were almost to be expected by the course of " nature.

" On our arrival at Gibraltar, in January " last, to refit, a very unfavourable change " took place, and numerous cases of fever ap- " peared."

In a subsequent communication, Mr. Rae adds the following particulars.

EXTRACT.

" *I am certain that almost all the cases which* " *occurred, on shore or on board, were of the* " *remitting or intermitting kind.* I did not " hear of any cases of the *three day fever,* ex- " cepting two; one the master of a transport, " the other a soldier, at the examination of " whose body (post mortem) I was present. " The body was of a yellow tinge throughout, " but more particularly about the face and " breast; the extremities were covered with livid " spots; scrotum and penis perfectly so. On " opening the abdomen, the whole of its con- " tents were found in a state of high inflamma-

" tion; indeed so much so, that I was almost
" induced to suppose, that the fever had been
" symptomatic of inflammation of the abdomi-
" nal viscera. The stomach was nearly divested
" of its villous coat, the peritoneal coat and
" vessels apparently only remaining; towards
" the pylorus it was nearly perforated. The
" stomach contained a quantity of dark co-
" loured fluid, similar to coffee grounds, which
" Mr. Campbell, surgeon to the forces, in-
" formed me, constituted the black vomit,
" which came on previous to his death. The
" liver, &c. partook of the general inflam-
" mation, but did not appear indurated or dis-
" eased.

" Of the nature of the country, I need not
" now inform you, as you have yourself visited
" the place; suffice it to say, that Galleras suf-
" fered most, the easterly or land winds causing
" a stream of effluvia to pass between it and At-
" taleya; which effluvia, especially in the night,
" was evident to the senses in the entrance of
" the harbour. A small redoubt, on the east
" side of Galleras suffered much; and few men
" stationed there escaped. The village of St.
" Lucia, on the east side of the bay, suffered
" little, though in the vicinity of the burying
" ground; and a detachment of men employed

" on the works of St. Julian, a height to the " eastward, were in good health.

" These circumstances clearly point out the " remote cause; and had the soldiers been en- " camped in the country, or heights to the east- " ward, it is probable many lives would have " been saved.

" To the best of my recollection, the 67th " Regiment lost every fifth man, besides women " and children: this was not the only evil at- " tending it, as many pale, emaciated figures " were left, predisposed to relapses or other dis- " eases. Those who were on board, landed in " perfect health, greatly envied by their com- " rades who had been on shore; indeed, men " taken ill on shore, were confident of their re- " covery on board.

" Mr. Campbell, surgeon to the forces, ex- " erted himself greatly, and procured an hos- " pital ship for the convalescents; but the " fever had gained its zenith before his ar- " rival, so that his exertions were often too " late."

The disease, as described by the Spanish physicians, commences with pain in the head, loins, and calves of the legs; increased heat and thirst; white tongue, eyes inflamed, suffused, and prominent; in some, great prostration of strength,

irritability of stomach, and yellow suffusion. The young, plethoric, and robust, suffer most.

The treatment is in general begun by giving a purgative of crem: tart: and tamarinds, which is repeated, if, after several visits, it should be found the first has not operated. In other cases, where the prostration of strength is great, the bark, both in substance and tincture, is ordered from the beginning, alternated with warm broth. Cold affusion has been employed, but seldom until hæmorrhages had taken place. Sinapisms are applied to the feet, and clysters of sea water much used. Dr. Riseuno mentioned having, in one instance, ordered blood to be drawn, to the amount of 20 ounces, in the quantity of six ounces or so at a time; this patient had severe pain in the head and breast; the abstraction of blood was attended with the happiest effect, and the patient speedily recovered.*

* The aversion to blood-letting in this disease is very general amongst the physicians of Spain. Aregula condemns both the use of the lancet and mercury (page 216, Breve description de la Fiebre Amarrilla). In Murcia, however, where the disease has appeared, I was informed in May last, that a physician from Madrid had, by the use of the lancet, saved sixty-nine patients out of seventy in this fever. The one who died, was stated to have applied too late.

Notwithstanding the many opportunities the Spanish physicians have had of observing this disease, very considerable difference of opinion prevails as to its treatment; while one party (which is indeed the most numerous) coincides in opinion with Aregula, another asserts the superiority of that recommended by de la Fuente. But neither seems to have been attended with much success. To me the first appears *inert*, the second *highly injurious*.

Dr. Riseuno, after several conversations, obligingly favoured me with the following account, which may be considered an epitome of the practice generally pursued, as recommended by Aregula:—

" My dear friend and companion,

" I have now the pleasure to transmit " you the slight sketch of the epidemical yellow " fever, which you expressed a wish to receive " after the consultation I had the honour to " have with you on the evening of the 16th in- " stant.

" I have attentively observed the " fiebre ic- " terodes," or yellow fever, which has raged in " the city of Carthagena, during the years 1804, " 1810, 1811, 1812; and I have not the small-

" est doubt, that the disease was brought to us " from abroad.

" In the year 1804 it was communicated " by a Spanish man of war, which left Alicant " while the fever raged in that city, from " whence, during the same year, it was carried " to Cadiz and Malaga.

" *In the year* 1810 *it was brought from Ca-* " *diz and Gibraltar,* by an armed coasting ves- " sel; it is not known how it was communi- " cated in the year 1811; in 1812 it was brought " from Mazaron.

" A combination of circumstances peculiar " to this place, such as a very numerous popu- " lation, confined within a proportionably li- " mited extent; the situation of the town, " which is low, and surrounded by hills; the " very trifling egress of the inhabitants, owing " to their unwillingness to leave the place; the " excessive mortality amongst the professional " men of every description; and the consequent " diminution, or rather want of attendance on " the sufferers, occasioned the loss of *twenty* " *thousand victims.* The mortality has been " very considerably diminished during the suc- " ceeding epidemics, in consequence of the " abovementioned causes having been as much

" as possible removed, although it was still " proportionably great.*

" The disease has invariably appeared with " its characteristic symptoms; the patient is " suddenly seized with shivering, *an acute pain* " *in the head* or cephalalgia; the *eyes are red,* " *and a sensation of pain is felt in the region* " *of the præcordia; lumbago, and pains in the* " *joints; and frequently in the lower extremi-* " *ties;* and within a few hours after the attack, " *the pulse becomes full and greatly accele-* " *rated.* The tongue is moist, and slightly " furred; in some cases nausea ensues, which " is followed by vomiting; and the matter " brought up is either bile, or of a bilious ap- " pearance; sometimes it is of a dark hue, or " green, and in many cases *is followed by great* " *prostration of strength.*

" On the second or third day the patient is " apparently free from fever; but, within a few " hours, the bilious vomiting returns, which is " usually like coffee grounds, or black, or con- " sists of blood, which is, in some instances, " also discharged in large quantities from the " gums, nostrils, ears, and urethra; from the

* The population of Carthagena in 1811 was estimated at 9000. In 1812 rather less.

" vulva in women, in whom it frequently occa-
" sions abortion.

" In this stage of the disease some become
" delirious, others comatose; some again are
" restless, and rave incoherently, leave their
" beds, and lie down in such others as they can
" find, or on the ground; in many instances the
" disease is accompanied by a retention of urine,
" in others the secretion of that fluid is greatly
" diminished; some are attacked with convul-
" sions, others with hiccough; but in general
" all, or the greater part of the above symp-
" toms occur, and are *frequently* accompanied
" by a yellowness of the skin. If after the
" seventh day from the attack, this yellowness
" should make its appearance, together with a
" diminution of the above symptoms, and a
" copious perspiration should ensue, the disease
" sooner or later terminates favourably. *It is*
" *seldom found, however, that those recover,*
" *who are attacked with these complicated*
" *symptoms, enumerated as above, but they*
" *are generally carried off from the fourth to*
" *the seventh day.*

" In many instances the disease terminates
" either in ascites, or some other species of
" dropsy; sometimes the patient becomes con-
" sumptive; and it was remarked in 1804, that

" when they had attained sufficient strength to " walk about, an eruption of large pustules " made its appearance; during which period " it was also observed, that both sexes were " strongly inclined to venery. In the same " year the hair of convalescents frequently fell " off.

" The method of treatment varied consider- " ably; some administered emetics, others pur- " gatives; some bled their patients; whilst " others had recourse to clysters, tonics, and " bark; in other instances, sudorifics were em- " ployed; *but the most rational method which* " *has hitherto been pursued,* is that which has " been recommended by those learned persons " who have written on the subject, and it coin- " cides with the opinion of the most enlightened " professors of this city, and is confirmed by " daily experience.

" This method consists in keeping the bow- " els open, by mild and cooling purges, such as " pulp of tamarinds and crem: tart: mild eme- " tics have been administered; acids and suba- " cids, particularly those of a mineral kind, " have afterwards been freely given. When " nervous symptoms occurred, recourse was had " to antispasmodics; when looseness took place, " the concentrated mineral acids were freely " prescribed, and also cold bathing with *fresh*

" water, to reduce the heat of the skin. When " debility began to appear, the tincture of bark " was thrown in, to which was added some " light cordial mixture, with a view to allay the " vomiting which so frequently occurs, admi- " nistered in spoonfuls, when I remarked the " slightest aversion to the tincture of bark. I " have administered the bark in substance, in " very few cases, as patients strongly object " to its use.

" Several persons, who have seen this disease " in Murcia during the last few years, have not " failed greatly to extol the bark, asserting it, " when given in substance, to be a specific in " this fever; but it must be administered (ac- " cording to its author, La Fuente), in the " quantity of *two pounds of the powder,* more " or less, which must be taken in forty-eight " hours after the patient is first attacked: this " method may be efficacious; but I have feared, " and still continue to fear to adopt it gene- " rally.

" *Some have been cured by bleedings from* " *the arm;* others by cooling medicines; and " some by sudorific infusions.

" I should greatly enlarge this letter, were I " to continue my remarks, as they occur to me, " on the subject of the administration of bark " in substance; I shall only repeat, that I, my-

" self, use the tincture, and this in cases of de-
" bility, or when the disease is on the decline.

" Calomel has been given with success, in the
" beginning of some cases ; leeches have been
" applied to the head, and behind the ears : in
" cases of delirium or drowsiness, sinapisms
" were applied to the soles of the feet, thighs,
" and arms alternately; and when these were
" found to be ineffectual, blisters to the nape of
" the neck were had recourse to.

" All animal food was proscribed ; vegetable
" substances were given, such as boiled rice and
" panada, to which chicken broth, veal broth,
" or beef tea were occasionally added.

" Such, my dear friend, is the plan of treat-
" ment adopted in this city, in the cure of
" the epidemic yellow fever, a method which
" has my full approbation ; not that I lose
" sight of the advantage to be derived, in the
" cases of such patients as are of a nervous
" constitution, from friction of the regions of
" the stomach and belly with sulphuric æther,
" both with a view to mitigate the anxiety, hic-
" cough, and other disagreeable symptoms, and
" also to allay the vomiting.

" It would afford me the greatest pleasure to
" be able to point out any method of treatment,
" which would prove an alleviation to suffering
" humanity, under this heavy scourge which

" it has been unfortunately subject to; but, my
" dear friend, I am reluctantly compelled to
" acknowledge, that during the four epidemics
" which have prevailed, I have not been able to
" fix on any plan, upon which I can invariably
" depend, in the treatment of this disease: a
" disease, which, from the very first moment of
" attack, is of the most malignant nature of
" any hitherto known, for which reason it ought
" to be combated on its very first appearance;
" for mild and simple as it may appear, it is of
" a most insidious nature, often appearing with
" symptoms, which, if incautiously treated, lead
" to many others of a far worse description;
" and whilst, under this idea, the effect of the
" medicine is awaited, before a more correct
" judgment of its efficacy can be formed, symp-
" toms make their appearance which speedily
" deprive the patient of life; whilst perhaps no
" remedy has been applied, or, as frequently
" happens, if administered, it could not be re-
" tained on the stomach of the patient.

" From a consideration of the foregoing cir-
" cumstances, *I am induced to prefer a passive*
" *method of treatment;* by which I do not mean
" to insinuate, that the physician should be
" altogether neutral, but that a general plan
" should be kept in view; whilst each indivi-
" dual ought to be treated in a manner the

" most appropriate to his constitution, tempe-
" rament, age, manner of living, &c. &c. and
" under this invariable idea, that the mildest,
" simplest, and easiest method, is that which
" is preferred by nature; particularly in the
" complaint under consideration. This has
" been repeatedly observed, either in the case
" of those persons who, being abandoned by
" their family and physician, are unexpectedly
" preserved; whilst, on the other hand, many
" of those who were assisted by physicians, and
" who took and retained a great quantity of
" medicines, expired under this treatment, and
" that of the violent fever.

" The general result of my observation is,
" that it is a disease of a highly malignant cha-
" racter, and that it is contagious to the extent
" of three or four varas from the body of the
" patient; that the infection adheres to clothes,
" furniture and wood, which may happen to be
" near it; that whoever exposes himself to its
" action, and afterwards withdraws himself
" from all contact with the contagion, the dis-
" ease will, if he be infected, make its appear-
" ance within the space of twenty days exactly;
" at the expiration of this period he is per-
" fectly safe, unless he again expose himself to
" contagion. The most serious mischief at-
" tends the removal of patients from one place

" to another. I cannot point out any better
" preventive against contagion being communi-
" nicated by clothes, furniture and buildings,
" than a free and uninterrupted ventilation,
" ablution with sea water, and white-washing
" the walls with lime.

" In some instances recourse was had to fu-
" migations with oxygenated muriatic acid gas,
" as a preventive, or even as a preservative,
" but without effect: *I was constantly sur-*
" *rounded with an atmosphere of this gas,*
" *whilst in the Military Hospital; the same*
" *was the case with several families, who, like*
" *myself, took the disease.* I will not however
" deny its efficacy in other instances, and even
" in cases of the disease under consideration;
" but a free and complete ventilation, is one of
" the most certain preventives, as well as the
" removal of all excrementitious matter from
" the apartments of the patients; these two
" precautions are not only of a curative nature,
" but also tend to the preservation of those who
" are healthy, although in the latter point of
" view, they are very precarious: the only real
" and effectual remedy is in flying to a great
" distance. It has been remarked, during the
" last few years, that those who remained at a
" limited distance have been attacked, contrary
" to what happened in 1804, when all those

" who removed to the distance of a mile escaped " the contagion.

" In the year 1804, this fever alone prevailed, " which, like the succeeding epidemics, ceased " when the cold weather had continued some " length of time: bilious and intermitting fevers " have also been confounded with this disease, " all of them having very bad symptoms, and " remaining for a length of time without yield- " ing to the most judicious treatment.

" In its attacks, this disease spares neither " age, sex, or condition; if any are more ex- " empt than others, they are children, very old " persons, ideots, or madmen. I have remarked " that the negroes have it of a milder nature; " but it preys without mercy on the young and " robust, to whom it proves highly fatal, as " well as to pregnant women, whom it causes " to miscarry, doubtless with a view to make " up for the lenity with which it affects the " fair sex in general.

" Those persons are also exempt from its at- " tack who have actually once suffered it. I " have heard of one or two instances of persons " dying with the yellow fever, who were confi- " dently asserted to have been previously af- " fected with it; but if this were the case, they " are perhaps solitary instances.

" The bodies of persons dying with this dis-

" ease, are remarkable for their pale yellow " colour, and for their having dark or livid " spots, particularly on the back, breast, and " scrotum; erythematous inflammation is also " observable in the stomach and intestines: the " liver is enlarged beyond its natural size; in " some instances the gall bladder is found " empty. I have generally observed the sto- " mach to contain a dark coloured fluid, like " coffee grounds, in greater or less quantity. " In other instances, the internal surface of " the stomach and duodenum are found gan- " grened. The bladder is sometimes filled " with its natural fluid, when the patient has " had suppression of urine, but empty when " the secretion of that fluid has been im- " peded.*

" I could wish that your residence in this " city were more protracted, that I might have " it in my power to collect the ideas necessary " for me to communicate to you respecting this " dreadful disease; of this, however, I am un- " fortunately deprived.

" I have always abstained from publishing " any thing on the subject, from a convic-

* Dr. Riseuno informed me, that it had not been usual to examine the brain.

" tion that I can add nothing to the masterly
" productions of Aregula, Miller, and Rush.

" (Signed) " JUAN RISEUNO."

" *Carthagena, April* 20, 1813."

The foregoing is a correct history of the disease and treatment given and followed by the pupils of Aregula: the following extract, from the Journal of Carthagena, called *Economico Politico,* dated August 1812, and which obtained the thanks of the Junta of Health, will at least exhibit the method of cure in a new point of view.

EXTRACT.

" All parties agree that the essential charac-
" ter of the yellow fever is the genuine typhus
" icterodes, as it is termed by Sauvages. This
" *consists in a great rise in the pulse during*
" *the first two or three days;* after which it
" declines without the occurrence of any criti-
" cal evacuation: this is succeeded by debility,
" a very small pulse, and universal yellowness,

" without a heated skin or a quick pulse. In " order to form an accurate conception of this " fever, whose ravages have been so fatal in " Spain during late years, it must, after the " plan of the abovementioned Sauvages, be di- " vided into two or three distinct stages."

" *First Stage.*"

" During this, it is remarked that the diffu- " sion of the *deleterious stimulus* which pro- " duces the yellow fever, is always followed by " shivering; *a full and frequent pulse, which* " *is generally very hard;* the heat of the body " does not exceed 102 degrees of Fahrenheit; " the breathing is short; tongue moist, furred " and white, or brown towards its centre; on " the second day the thirst is moderate, the " belly neither hard or tense. This fever con- " tinues for the space of two days, without in- " termission, and terminates on the third day " by a slight perspiration. During the first " day, the patient is generally drowsy, and in " much pain, attended with lowness of spirits " and fainting. *The face and eyes are flushed,* " and the latter cannot bear the stimulus of " light; *the blood appears highly inflamed and* " *buffy:* on the second day the patient be- " comes very restless, but is free from pain;

" the stools are hard and black, and he is light-
" headed and watchful. The urine, which is
" discharged in great quantity, is thin, and
" without any sediment during the first day:
" turbid on the second; and on the third day
" bloody, depositing a gray sediment; in the
" course of this last day the pulse becomes
" weaker, and the heat of the body is greatly
" diminished, without the intervention of any
" critical evacuation; the debility increases
" greatly, the eyes acquire a yellow tinge, and
" the first stage concludes."

" *Second Stage.*"

" During this stage the pulse is slower, softer,
" and nearly imperceptible; the heat of the
" body varies a little from its natural state; the
" patient sometimes complains of cold. The
" yellowness, restlessness, and vomiting in-
" crease; the face, breast, and extremities ac-
" quire a livid hue; the breathing becomes
" slower; the tongue is cleaner, and red; the
" vomiting is sometimes so violent, that the pa-
" tients can retain nothing on their stomachs;
" at one time discharging nothing but blood,
" and at others bringing up black and putrid
" bile; watching, delirium, and restlessness
" ensue; the pulse diminishes in strength, and

" the *redness of the eyes increases*, although " unaccompanied by pain; the yellowness, in " many cases, is not observed during this stage " of the disease, excepting in the eyes; a few " hours, however, before death takes place, it " extends to the face, breast, and neck; which " parts are usually covered with black or red " spots: in women the menstrual discharge is " accelerated, and becomes more copious; the " blood is generally so much thinner than " usual, that it is freely discharged from almost " all the emunctories; the patients sometimes " become distracted, at other times they are " affected with diarrhœa, voiding, with great " pain, black liquid, or indurated fæces; the " urine of those patients who turn yellow, is " copious in quantity, and of a saffron hue; but " in other cases it is colourless."

" *Third Stage.*"

" If, during the preceding stage, the vio- " lence of the above symptoms should abate, " and the functions of nature in some measure " recover their tone, some hopes of recovery " may be entertained; but if, on the contrary, " the former become more violent, and the lat- " ter still further deranged, death will almost be " inevitable: no doubt, however, can be enter-

" tained of this event, when the face loses its " animation, and becomes of a leaden hue, or " the face and neck covered with black spots, " and these, and the breast, with a profuse " perspiration. An effusion of blood takes " place from the nostrils, mouth, and ears; " swallowing becomes difficult; hiccough, con- " vulsions, drowsiness, and continual delirium " ensue, and finally, twelve hours before death, " the loss of the voice and pulse,* which por- " tends the termination of this fatal tragedy. " *Should the season be hot,* this dreadful dis- " ease seldom extends beyond the third day.

" I have already stated the yellow fever to be " a disease of the most putrid and malignant " nature of any which attacks the human " frame; and, from this circumstance ought to " be drawn the principal indication, for the " prompt adoption of the most appropriate and " safe method of treatment: on this principle " all the best modern practitioners are agreed; " notwithstanding, however, this concurrence " as to the nature of the disease, they differ " so much from each other, as to the best me- " thod of treatment, and their attempts have " hitherto proved so unsuccessful, that it may

* This does not coincide with general observation.

" be justly said, that they are better acquainted " with the manner in which this dreadful dis- " ease ought not to be treated, than the best " method of curing it.

" Emetics, diaphoretics, purgatives, or su- " dorifics, are the medicines which have gene- " rally formed the basis of this method of treat- " ment, and have divided the opinions of prac- " titioners, but to so little purpose, that they " all candidly acknowledge the inefficacy of the " plan which they follow, and are content with " supporting that system which they deem the " least unsuccessful. It is astonishing how few " of them have spoken of antiseptics, or in what " a hesitating and timid manner they have been " mentioned; particularly bark, the principal " and most direct of them, and that which com- " bines within itself the qualities of the most " powerful antiseptics, and consequently (if any " such exist) must be the genuine specific, " which is most to be depended upon for the " cure of this disease, provided it be adminis- " tered with the activity, speed, and perse- " verance, which the urgent nature of the dis- " ease requires; and also that it be given in " those repeated doses which are pointed out in " the sequel; as this is absolutely requisite, " from the rapid progress of the disease, and " any omission or delay that might arise in the

" exhibition of this excellent medicine, would " tend to frustrate its good effect, and bring its " efficacy into disrepute.

" Under this supposition I assert, that as soon " as any person, of either sex, may be seized " with the first symptoms of yellow fever, they " ought, without loss of time, to procure six or " eight ounces of good bark, and without delay, " or, at all events, within six hours of its first " attack, they should begin to take a dose of " at least half an ounce of the bark; which " quantity should be repeated every two hours, " in whatever manner may be most agreeable to " the patient: this method ought to be perse- " vered in with exactness for the first forty- " eight hours after the attack.

" It is, however, necessary to remark, that " this method should be accompanied by a free " use of vegetable acids, either in draughts, or " in combination with the bark itself; or re- " course should be had to the mineral acids, " where the circumstances of the patient render " it necessary; for it is evident, that these me- " dicines last mentioned, with the bark, are the " most powerful that can be used, with a view " to overcome this dreadful scourge of huma- " nity. To these medicines must be added a " proper regimen of nourishing substances, " consisting of panada, chicken broth, or veal

" broth, as may be judged proper by the physi-
" cian.

" Finally, I ought perhaps to assure you,
" that the bark, given in the aforesaid quanti-
" ties of six and eight ounces, will infallibly
" cure this dreadful disease during the first two
" or three days, provided the requisite condi-
" tions be attended to in its exhibition; namely,
" that the aforesaid quantity of bark ought to
" be used and retained on the stomach during
" the first forty-eight hours after the attack;
" and secondly, that its exhibition must take
" place as near the commencement of the at-
" tack as possible.

" This assertion, which is as positive as it is
" well grounded, besides agreeing with the insi-
" dious nature of the disease, is further consi-
" dered as a medical axiom in the writing or
" memoir, published with superior approbation
" in the year 1805, by that great medical ge-
" nius, Don Tadeo Lafuente, chief consulting
" Physician to the Royal Armies, who was re-
" peatedly commissioned as Inspector of the
" Public Health, in the district of the Plain of
" Gibraltar, where the truth of this assertion
" was proved by numerous observations, as well
" as by many and sound reasons."

OBSERVATIONS.

In perusing the foregoing accounts of the fevers which have been so prevalent in Gibraltar and Carthagena, and on comparing them with the history and cases of those which have occurred in the Mediterranean Fleet, it is impossible not to be struck with the perfect and uniform resemblance they bear to each other; and I now proceed, in a concise manner, to trace their similarity, and shall add such observations as seem necessary in the prosecution of this interesting subject, premising however, that the view I have taken of this disease, as it has appeared in the fleet, has been at the bedside of the patient; the cases I have given are transcribed *verbatim* from the prescription tickets; the dissections were performed with the aid of the three assistant surgeons, Messrs. Brunton, Cowan, and Scott; the two first were always with me on these occasions; and the notes immediately made, on the morbid appearances presenting themselves.

In the history of the fever of the fleet, it was noticed, that in the early part of summer, the cases were generally slighter, and the gastric symptoms less severe; and that it was not till

the autumn that this disease assumed its most dangerous form: the same will be found to be the case in the epidemics of Gibraltar and Carthagena, and, I may add, in the other cities of Spain.

The fevers which have appeared in Gibraltar and Carthagena, have been uniformly declared, by the medical men of these places, to be of the same nature: in this opinion I coincide; and therefore, in my subsequent remarks, shall consider them in the same point of view.

In those which have occurred, whether at Mahon, Carthagena, or Gibraltar, the same premonitory symptoms will be found. In some cases, the prostration of strength, and shivering, followed by acute head-ach; in others, the more sudden attack, occasioning syncope, succeeded by violent reaction, then the flushed face, the watery and inflamed eye; the oppression about the præcordia; the irritability of stomach; the pain in the back and limbs; in some the full pulse, in others the small and quick, and as the fever advances, irregular; and in short, a most perfect similarity in the disease whenever the treatment has been alike. The same terminations are also observable, as hæmorrhagies and yellow suffusion, and in some cases, the black vomit; in those who do not immediately die, the termination in ascites or anasarca, he-

patitis, phthisis, and intermittent fever, occurs in each.

The disease which prevailed in the Seventh Veterans at Gibraltar in 1810, was asserted by the greater part of the medical men, to be the same with that which occurred in 1804, and was denominated by way of distinction, "*the Bulam.*" I have lately been enabled, through the assistance of a friend, to obtain the cases of seven of these men, which he received from the assistant surgeon of the regiment who attended them; and on comparing them with those which have come under my own immediate care, or general inspection in the fleet, it does not appear to me that a shade of difference exists.* These are indeed very deficient, in several points, which it would have been satisfactory to have ascertained; such as the length of time the patients had been ill before they complained, their ages, habits, &c. still they give the more prominent symptoms, and in that respect afford sufficient information.

The case of Thomas Nottage is the first on the list; in the surgeon's return he is classed under the head of *Bilious remittent;* though the subsequent four cases, which are denominated

* Vide Appendix.

"*Bulam,*" are declared to have the same symptoms as Nottage.

This man is stated to have been attacked with shiverings, succeeded by great pain across the forehead and back, his eyes inflamed, with dry and hot skin, white tongue, languid pulse, and costive bowels. Surely a nearer description of the fever, as it has appeared in the fleet, (though indeed it might have been more minute) could not well have been given; and I will venture to assert, that whenever a violent attack of this disease is met by a similar plan of treatment, the termination will not be more favourable.

In the case of Edward Robinson, who died on the night of the same day on which he was received into the Regimental Hospital, it is stated, "that on being put to bed, he was in-"stantly seized with the black vomit, and died:" without presuming for a moment to question the correctness of this observation, I may be permitted to say, that I never, either in the West Indies, or the Mediterranean, saw this symptom occur, but as a consequence of long continued vomiting, or attempts to vomit; and I am supported in this assertion by almost every writer on these diseases. I therefore conclude, that

this man had been ill some time before he was received into the hospital.

The cases of Sergeant Inglis, and Gooch, as far as I am able to judge, present nothing extraordinary; indeed they do not bear the features of being very violent. I well know that a severe attack of this fever will not yield to such a plan of treatment. If there be no better evidences of the prevalence of a *nova pestis* in the Garrison of Gibraltar than these, the medical world will hesitate in believing that the *Bulam* existed there in 1810. I much doubt whether Dr. Chisholm will recognize, in either of these cases, a single member of that family.

There is indeed another case which occurred at this time, wherein the black vomit took place, and the only one in which Mr. Glasse, Surgeon to the Forces, (a gentleman of talents and experience, and who had been in the garrison the whole time the destructive fever of 1804 prevailed); saw any resemblance to that disease. The case just alluded to, was that of Ann Barlowe, the wife of an artillery man. She remained ill in a small shed, for four or five days *within the garrison*, which was crowded with visitors by day and night, and was removed in the last stage of the disease to the neutral

ground, where she died with the black vomit; and those persons who had been with her during her illness, were at the same time sent out and placed in quarantine, but in no instance did the disease appear among them.

I may here remark, that the disease I have met with in Mahon, during the autumnal months, in my opinion, very closely resembles the yellow fever of the West Indies; which I agree with Dr. Lind in considering the autumnal fever of all hot countries. I see the same symptoms at the commencement, and during its progress; the same terminations, and appearances on dissection. *Early* and *liberal* evacuations have been found *highly* beneficial in the treatment of both diseases.* Thus then there is a parity of symptoms, of terminations, appearances on dissection, and in the operation of remedies.†

* Vide Mr. Duke's paper in the Appendix. I would also recommend to the reader's perusal a valuable paper from Dr. M'Mullin, Physician to the Forces, inserted in the Edinburgh Medical Journal for January, 1814.

† The following excellent picture of the yellow fever, is from the pen of Dr. Grant of Jamaica, extracted from a valuable little tract he published in 1805; which will be found to correspond nearly with the severer cases of autumnal fever in Mahon.

"Symptomata pathognomica febris flavæ ut plurimum

In the epidemics which I have seen in the Mediterranean, the attacks are not alike violent

" sunt vehemens et gravis capitis dolor, vertigine crebrò
" comitante, aspectus confusus et rubore incandescens, albi
" oculorum vascula sanguine turgida et indistincta, circa
" præcordia oppressio laboriosa, lassitudo generalis et magna
" virium prostratio, cum doloribus lumborum et surarum,
" pulsu frequentius debili et instabili—nimiæ plenitudinis
" et distentionis speciem, et sanguinis circuitum imperfectum
" systema generale præfert. Hæc est constitutionis prima
" conditio jam jam memorata, et depletio et sanguinis mis-
" sio, quantitatem sanguinis minuendo, actionem solidorum
" restaurando, cum omnium symtomatum remissione, ca-
" pitis dolorem mitigant et sanguinis stagnationem interpel-
" lant.

" In secunda constitutionis conditione, firmitate corporis
" pollenti, symptomatibus supra dictis, pulsus est ferme
" plenus, fortis et aliquantum durus, interdum verò coarc-
" tatus et compressus, et arteriæ carotidæ externæ magno-
" pere micant; in hac conditione, ubi est tanta accreta actio
" vascularis, si morbo non immediate occurritur depletione,
" et præsertim libera sanguinis missione, febris complures
" horas gradu monotono cursum percurrit; deinde pulsus fit
" mollis et ut in sanitate regularis, et cutis temperiem na-
" turalem assimulat. Hæc sunt insidiosa signa et fallacia,
" in pulsuum intermissionibus, delirio, ventriculi aucta irri-
" tatione, singultu, tendinum subsultu, naribus et ore hæ-
" morrhagiis, extremorum frigore et omnibus concomitanti-
" bus in mortem præproperam terminantia. Paulo post
" febris, exordium, ventriculi irritatio difficillime mitaganda
" accedit. In initio bilis pura flava ventriculo ferme pro
" rumpit, deinde colore infecta cæruleo, et perniuium cor-

in all; undoubtedly the severity of the complaint will be in proportion to the exposure to

" rosiva, de qua ægrotus faucium excoriatione et ventriculi
" adore multum conqueritur.

" Febris progessu, materies ventriculo ejecta, ad nigrum
" colorem magis ac magis vergit, fæcibus coffeæ adustæ si-
" milem, filamentis natantibus, quæ, ex muco, abrasioni-
" bus ventriculi tunicarum, in quibus sanguis extravasatus
" putridus involvitur, composita videntur.

" Bilis in febre flava ejecta, multò minus est in quantitate,
" quam quæ ejicitur in febre biliosa, vel in hujus febris mi-
" tiore statu, typo clarius vel distinctius remittentis.

" Ægrotus non semper, sed plerumque est sitiens, et
" aquam frigidam propinare obsecrat.

" Linguæ superficies est firmè humida, et pelle alba tecta,
" sed citò, febre prævalente in colorem ferruginosum, et ul-
" timò adustum et nigrum vertente. In initio secundum
" febris statum, vesicæ lotium plus minusvè fucatum est,
" et in processu pullum et parva quantitate mictum. Ex-
" crementa alvina, post evacuationes primas constipatione
" fœtidas, minus inodora redduntur et fusca et liquida eva-
" dunt, sed cursu febris, nigricantia et ventriculi ejectioni-
" bus assimilia.

" Die tertio, aliquandò quarto, perraro quinto, oritur suf-
" fusio flava circum os, et ad tempora extenditur. Genæ
" ex colore rubescente fiunt lividæ et flavo tinctæ, et labia
" purpurascunt et nigrescunt. Hic color aureus pectori et
" extremis velociter progreditur, ventriculi irritabilitas, cum
" ejectionibus et dejectionibus, adustæ coffeæ fæcibus simi-
" libus ante dictis increscit; ore naribusque profluvia.
" Oculorum vascula indistincta, et flavedine sunt suffusa.

the remote, or the application of the exciting causes, the habit of the patient, or his susceptibility of receiving the disease; much will also depend on the plan of treatment which is adopted; but, it is not in the Mediterranean alone, that slight cases appear; in the epidemics of America, the physicians speak of their "slight cases of fever;" and in the West Indies, *cases purely ephemeral occur.* "In a "great majority of the patients affected by the "epidemic, however," (says Dr. Gillespie) "the symptoms were by no means so violent as "have been described; exhibiting in some, the "appearance of a simple ephemera, going off "in the course of twenty-four or thirty-six "hours, by a profuse perspiration; whilst in "others, *the character of a remittent was evi-* "*dent,* accompanied by catarrhal affections, "and going off by a diaphoresis, and expecto- "ration." At page 43, he adds, "In the most "acute cases, the disease took a turn during "the course of the third day, and terminated

"Die quinto (nonunquam citius) sexto vel septimo, et ali- "quando spatio longiore, singultu, delirio, multa præcor- "diorum oppressione et comate urgentibus, vitam æger "morte commutat."—

(*Tractatus de Febre Flava,* p. 12, 16).

" the first stage of the disease; but the more " ordinary duration of the first stage was until " the commencement of the fourth day." Again, at page 46; " For though there were many in- " stances of the fever being prolonged to four- " teen, twenty, and even twenty-seven days, " and having a fatal termination; such instances " were rare, *and were the translation of the* " *disease to the lungs, causing peripneumony;* " *or to the intestines in the form of diarrhœa.*"

The similarity of the fevers of the West Indies to those which appeared amongst our troops in the Netherlands, did not escape the attention of Sir John Pringle, and at pages 198 and 199 there is a note from Dr. Huck, in the sentiments of which, except in that part which refers to the medicines operating as emetics, I entirely coincide: it is as follows: " Even " in the most ardent and worst kinds of the " yellow fever, I think a paroxysm may gene- " rally be perceived once in four and twenty " hours; for the patient is commonly worst " towards the evening or at night. *And if the* " *yellow fever were to be distinguished in the* " *beginning, from the common remitting or* " *intermitting fever which was so fatal to our* " *army, it was only by all the symptoms run-* " *ning higher, and by a greater degree of* " *fever when one might have expected freer*

" *remissions.* Both fevers began with nearly " the same symptoms; sometimes, though rare- " ly, with a shivering. But whenever the fever " ran high, with burning heat, violent pains of " the head and loins, profuse sweats without " relief, *redness and burning pains of the* " *eyes, inflamed countenance,* watchfulness, " anxiety, oppression, and burning pains about " the præcordia, frequent vomitings of green " and yellow bile, (or what I think was worse) " a constant retching to vomit without bring- " ing up any thing, or vomiting the drinks " only, one might then almost certainly foretel " the yellowness; and if this appeared on the " second, third, or fourth day, the disease was " generally mortal. *I have often seen patients* " *labouring under most of these symptoms, im-* " *mediately relieved by early evacuations, and* " *the fever brought to intermit. Nay, I have* " *more than once seen this fever, with all these* " *symptoms, carried off by bleeding, and exhi-* " *biting, within a few hours from the first at-* " *tack of the disease, a medicine which ope-* " *rated pretty briskly both by vomit and stool;* " and I have known some of these very pa- " tients, who were so well as to go abroad on " the second or third day after, and who conti- " nued well for four or five days; but on com- " mitting some error, such as exposing them-

" selves too much to the sun, were again seized " with the same symptoms, and died on the " fourth or fifth day, with their skin tinged of " a deep yellow or copper colour. *Hence I am " apt to think, that there are different degrees " of the same disease, and that it sometimes " depends upon the manner the patient is treated " in the beginning, whether he shall have the " yellow, or only a remitting or intermitting f ever.*"

The plan of treatment which the medical practitioners of Gibraltar and Carthagena have adopted, appears to be alike, and their success has been similar. At Gibraltar, in 1804, nearly half the population died. The same was the case at Carthagena; and, I may add, during that year, in the southern cities of Spain, forty-five thousand, eight hundred and eighty-nine fell victims to this devastating disease.* With respect to the treatment therefore, little need be said; it has been any thing but successful.†

* See Aregula's account of this fever.

† Mr. Pym in his book states the civil population of Gibraltar in 1804 to have amounted to 14,000, which is very incorrect, as will readily appear by reference to the account of this fever inserted in the 5th vol. of the Medico Chirur-

Some of the physicians, and other medical men in both these places, have in general asserted, and no doubt believe, that the fever is of a contagious nature; that it has always been

gical Transactions. In 1813, when the population was known to be *enormously* increased, it stood thus:—

Civilians estimated at - - -	15,000
Garrison, soldier's wives, and children	5,501
	20,501

Sir James Fellowes states the civil population in 1804 to have been 10,000, including 4000 troops, and the total number of deaths 5,946; so that considerably more than half the population perished.

Regarding the treatment, the same author at page 154 observes—" It will scarcely be expected that I should be " able to give any satisfactory account of the treatment " which has been adopted for the cure of this disorder, " after the dreadful mortality that had taken place, and " especially as so many of the practitioners were amongst " the victims to its fury.

" From the surviving medical men I could collect nothing " consolatory, nor could any of them hold out a prospect " of success, from the use of any particular medicine, as " efficacious in this disease.

" I had collected several cases that came under my own " observation, but they are not inserted here, as it is rather " my object to shew the necessity of great attention to the " means for preventing the progress of the disease, than to " establish any fixed rule for its treatment."

imported, and has been propagated both by persons and goods. This is a question of the most serious import, and should not be lightly decided upon. On the one hand, if it be not contagious, much unnecessary alarm is occasioned; patients, who might otherwise have recovered, are deserted by their nearest relatives; commerce for the time destroyed; and individuals frequently suffer great distress. If it be a contagious fever, it would be doing the greatest possible injury to the community, to allow this disease to proceed, without using every means in our power to arrest its progress; to draw a line between the healthy and the infected, the living and the dead.

At this remote period, it is perhaps impossible to ascertain, with any degree of accuracy, the credence which should be given to the story, respecting the disease having been brought to Gibraltar, in the year 1804, by a man from Cadiz, of the name of Sancho, or one from Malaga, of the name of Santos: I have myself heard these stories; but I have never yet met any one who could tell me more, than that it was common report. Dr. Bancroft, in his valuable Essay on the Yellow Fever, has gone into this question very much at large; and, having examined the evidences with no common ability, rejects them as contradictory, and refuting each other.

If it were the case, that this disease was so readily received and propagated by communication with the sick, and that either of the men mentioned brought it from Malaga or Carthagena, how came it that the officer from Cadiz, or the seaman from Malaga and Gibraltar, did not introduce it into the Triumph? The account given by Mr. Griffiths of these persons' cases, leaves not the smallest room to doubt their being of the same nature with the disease then prevailing in Cadiz and Gibraltar; they were both cases of the worst description, and though the officer, on being taken ill, was removed, and died in a transport, yet the seaman continued on board the Triumph during his whole illness, a period of six days, and died there.

This man's name was George Richards; and on examining Mr. Griffiths's Journal at the Transport Office, I find his case recorded. He was taken ill on the 29th of September, had the usual symptoms, such as irritability of stomach, petechiæ, yellow suffusion, suppression of urine, and black vomit; and died on the 4th of October.

In addition to this, I have to mention, that the Conqueror of 74 guns, anchored in Gibraltar Mole about the 18th of September, 1804, and continued there several days. Three days

after going to sea, William Collins, a marine (whose case I have extracted from the Journal*) was taken ill, and died on the third day, with all the worst symptoms of the prevailing disease; yet *in neither of these ships was a single man affected.*

It is worthy of remark, that the surgeons of the before-named ships, had no doubt of the contagious nature of the fever; and the observations of the surgeon of the Conqueror to that effect, subjoined to the case, are well entitled to notice.

Here then are three well authenticated instances, wherein the disease (and that too of the most unfavourable kind), was received, and brought on board two men of war, where the patients died, and yet no contagion followed.†

In 1810, it was stated to have been derived from some deserters from Carthagena, who arrived in transports from that place. I have every proper respect for the character of the gentlemen who assert this to have been the case;

* See the Appendix.

† I have been credibly informed, that several instances of the same kind took place in merchant ships during the fever of 1813.

and, on any other occasion, which did not involve a matter of opinion, I could not for a moment refuse to accept their *ipse dixit;* but they must excuse me if, in the present instance, I hesitate in receiving it: I want proof; and surely those who have propagated the story, ought not to be slow in offering it. The transports, immediately on their arrival, were put under quarantine, and continued under that restriction the whole of the time disease prevailed on board. How then was it conveyed from thence? I fancy no one can answer this question. They were anchored, at the distance of at least half a mile from the garrison; probably more; and it will require no moderate share of credulity, even from one who has no doubt of the contagious nature of the disease, to believe that it would be conveyed, through the medium of the atmosphere, to such a distance.

The circumstances mentioned at page 137 will probably afford the reader a more satisfactory explanation of the cause of the fever in the garrison in 1810, than the hackneyed story of the Hankey. The deluges of rain which had fallen, sweeping with them, from the higher grounds, the putrid animal and vegetable matters, had in fact produced the perfect form and essence of a marsh; and the easterly winds and

hot sun acting on these materials, were soon followed by the malady in question.

If the fever had been of a nature so contagious, will it be credited, that after getting into a barrack, it would have stopped short, with only attacking thirteen men? Truly this would be a very accommodating contagion; one, half so civil, I have never before heard of. And I may be allowed to ask also, how it was, that none of the attendants, or others in the hospital, were attacked with this "*Bulam?*" The reply is obvious; the disease was the product of paludal effluvia, generated from putrid animal and vegetable substances, assisted by moisture and a hot sun, and retained in its situation by easterly winds; a refreshing north-west wind came, and scattering the noxious vapours over the face of the waters, restored health to the garrison.*

Respecting the supposed introduction of this fever into Carthagena, in the year 1804, it is generally believed in that city, that it was brought by a Spanish man of war from Alicant; but I could get no precise account how this took

* This also was observed in the fever of 1813. On the wind coming to the westward with rain, an immediate decrease in the numbers taken ill was evident.

place. Before proceeding further, it may not be considered irrelevant to the subject, to take a cursory view of the former state of the public health in this city, particularly, and in a more general manner, of that of the adjacent sea-ports on the shore of the Mediterranean.

Sir Gilbert Blane states, in his letter to Baron Jacobi, that—" This disease (the yellow fever) " shewed itself first on this side the At- " lantic, at Cadiz, in the year 1764; again in " 1800; and in Malaga in 1803." The occurrence of a fever which was often epidemic, in Malaga and Carthagena, before that period, I presume, Sir Gilbert was unacquainted with.

Mr. Townsend, in his " Journey through " Spain," (a work, which in point of accuracy, yields to none), has the following passages; speaking of Carthagena:—" Of diseases, the " most endemical, are intermitting, and putrid " fevers; these arise from the proximity of an " extensive swamp, containing many hundred " acres, which might be easily drained, so as to " produce the most luxuriant crops. In this " year (1785), during the autumnal months, " they lost two thousand five hundred persons; " and the succeeding year two thousand three " hundred. That I might have no doubt of the " nature of the disease, he," (Dr. Masdeval,

physician who was sent from Madrid by the Court, to direct the proper treatment), "related the usual symptoms; such as in the beginning, a remarkable prostration of strength, with intense pain, both of the head and back; intolerable thirst; the tongue foul, dry, black, and chapped when protruded; pulse hard, small, quick, and intermitting; parotid glands swelled; urine limpid at first, but turbid in the progress of the disease; respiration difficult; the white of the eyes become red; petechial spots on the arms and breast; hands trembling; watchfulness at first, followed by a propensity to sleep perpetually, without consciousness of having slept; delirium; noise in the ears, followed by deafness; involuntary tears; quivering of the lip; and if the patient were ill-treated, death" (Vol. III. p. 136). At page 23, Mr. Townsend, when enumerating the diseases of Malaga, mentions that —"In the year 1786 more than three thousand died in the hospital of San Juan di Dios, besides multitudes in the city and environs, of tertian and putrid fevers. In Barcelona the same diseases were very prevalent in 1784; and in Barcelonetta and the citadel, fevers never cease to rage, leaving behind in the winter, dropsies and jaundice, and in the sum-

" mer, producing malignant fevers. The same " diseases reign beyond Montguich, in the " low country watered by the Lobregat; but " although the prevailing wind, in its passage " becomes loaded with miasmata, yet being di- " verted from its course by that high mountain, " it has no baneful influence on Barcelona."

There is certainly in these accounts no mention made of the "yellow suffusion," which has of late years been so much noticed; it is, however, probable such a symptom did occur, yet was forgotten by one of the parties in their description of the disease, particularly as it is remarked, that the fever left behind it "*jaun-* " *dice and dropsies.*" It is likewise well known, that the "yellow suffusion" is more an incidental than an essential symptom, as many severe cases occur without its appearing; *and when evacuations are early and sufficiently had recourse to, it is but rarely seen at all.* This description otherwise applies exactly to the more modern disease. In those days the "*Bulam*" mania had not arisen, and it was not thought necessary to look for an *exotic origin*, for what was known to be a local disease. Amongst other circumstances which were mentioned to me while at Carthagena, relative to the fever which prevailed there in 1804, the

following, which I received from the best authority, and by the gentleman's permission, made a note of in his presence, places the non-contagious nature of it in a very strong point of view.

I have before mentioned that the disease ceased on the 23d of January 1805, on which day the last patient was received into the Royal Hospital. *On the fifth of February following, a French frigate, having on board the wounded of the Arrow Sloop, which she had captured a few days before, after a gallant resistance, arrived in the harbour; the wounded were immediately landed, and placed in the same bed and bedding, in which several patients, who had died of the prevailing fever, had lain, without the bed or bedding having either been washed or aired; yet not one of these men was attacked with the disease in consequence.** I may also remark, that a blacksmith, who worked in Carthagena, but whose residence was at some distance without the walls, contracted the disease, and died in the same bed with his wife; yet neither herself or their children were infected.

From 1804-5, till 1810, there does not appear

* This has also been confirmed to me, by an officer of the Arrow Sloop, who was a prisoner with his shipmates.

to have been any remarkable sickness in Carthagena; but in the latter year the "yellow fever" swept off three thousand, being a fourth of the whole inhabitants, in the course of six or eight weeks, during which time it prevailed. There is a circumstance, in accounting for the appearance of the fever this year in Carthagena, which will shew how little dependence is to be placed on the accounts, which are propagated respecting the importation of disease. Dr. Riseuno positively asserts, that the fever was brought from Cadiz and Gibraltar in 1810; while at the last place it is stated to have been imported from Carthagena! Now, the "*Bulam,*" as it was called, did not make its appearance in Gibraltar, till the beginning of October this year, and the disease had been prevalent in Carthagena, at least a month! The inhabitants of Cadiz were perfectly healthy up to the middle of September, and before that time many deaths had occurred at Carthagena. But even supposing the disease to have been contagious, its existence in Cadiz this year, was never unequivocally declared. It is impossible therefore that it could have been derived from either of these sources, had it been of a nature to be conveyed by persons or goods.

In 1812 this ill-fated city was again afflicted;

and it was officially stated in the Gibraltar Chronicle (27th February, 1813) on the authority of the Board of Health of Carthagena, "that it had been characterized by its usual "symptoms, and that two thirds of those taken "ill died." Dr. Riseuno states, that the fever was this year brought from Mazaron.

Its progress at that time amongst the troops who were quartered there,* leaves no doubt as to the cause of the disease. The whole of the sickness in the 67th Regiment, took place at Galleras; which has uniformly been remarked as the most unhealthy situation about Carthagena. Every evening during the summer, the miasma is carried by the land wind, from the marsh directly on Galleras; to which are added, in its course, the exhalations from the mast ponds, and that which will be extricated by partial rains, succeeded by a hot sun, from the general scite of the arsenal. So offensive were these exhalations, that some of the officers declared to me, that they could scarcely respire out of doors after sunset. In the morning the castle was enveloped by a dense vapour, which did not disperse till the sun had attained some height; the effluvia from these sources were even

* See from page 165 to 172.

perceptible at the entrance of the harbour. St. Julian being on the opposite side of the harbour, is entirely out of the line of the marsh air, and there the men, though much exposed to causes, which often of themselves produce sporadic cases of fever, continued perfectly healthy. Attaleya, which is also out of the line of the marsh air, remained very healthy during the whole time. In the Leyden, lying in the Bay, nearly fifty of the 67th Regiment were attacked, and, except one, they all recovered on board; *only such men, as by going on shore, were exposed to the influence of the marsh air, were taken ill, and they did not communicate the disease to a single person on board.* In the fleet, *in no instance,* have the surgeons considered, or said, that the disease was contagious.

With such powerful evidence of the non-contagious nature of this disease before me, I cannot but conclude, that it is neither propagated by persons or goods, but is the genuine product of miasmata. It is useless for any one to say, in support of its contagious qualities, that whole families have been attacked; this only proves, *that whole families have been exposed to the same remote cause.* In Zealand, nearly whole regiments were taken ill with the fever, yet no one was hardy enough to assert that it was contagious.

From these circumstances will be seen, how unnecessary, and unavailing it is, to impose a quarantine, to prevent the propagation, or introduction of such a disease; and while we applaud the removal from the influence of the marsh miasmata, *as the only certain prophylactic,* we cannot but smile at the hand, which by a feeble barrier, would attempt to set limits to its ravages.

APPENDIX:

CONTAINING

1st. *Cases of Fever in the 7th Veterans, at Gibraltar in* 1810.—*Surgeon's Return of the number taken Ill.*

2d. *Cases of the Gibraltar Fever in the Conqueror.*

3d. *Case of an Officer of the 67th, on board of the Leyden at Carthagena.*

4th. *Epidemic of* 1813, *in Gibraltar.*

5th. *Account of the Symptoms and Treatment of the Epidemic in Gibraltar,* 1813, 14, *by J. Humphreys, Esq. Royal Artillery.*

6th. *Communication from Mr. Duke, Surgeon, Royal Navy, on the utility of the Lancet in the Treatment of the Yellow Fever of the West Indies.*

7th. *Reply to Mr. Pym.*

8th. *Dr. Villaseca's Account of the Fever in the Invincible and Temeraire, in Mahon.*

APPENDIX No. I.

STATE OF THE DEATHS AND RECOVERIES

IN THE

7th Royal Veterans

DURING THE

FEVER of 1810, at GIBRALTAR,

By Mr. WATERS,

Assistant Surgeon of the Regiment.

Date.	*Name and Symptoms.*	*Treatment.*
Oct. 11th.	Thomas Nottage, attacked with shiverings, great pain across the forehead and back, eyes inflamed, skin hot and dry, tongue white, pulse languid, bowels costive.	℞ Calomel gr: iv. Extract: Cathart: gr: xv. M. statim sumend:
12th.	Pain in the back increased, and shooting down the lower extremities, great thirst, tongue yellow and dry in the centre, petechiæ on the breast and arms.	℞ Pulv: antimon: gr: iij. Camphor: gr: iv. M: sumend: tertia quaq: hora.

Date.	*Name and Symptoms.*	*Treatment.*
13th.	Stationary.	Port wine.
14th.	The whole body of a *dusky yellow*, delirium, nausea, pulse hardly perceptible.	Pulv: cinchon: ℥ ij tertia q:q: hora ex vino rubro.
15th.	Died at 4 A. M.	
Oct. 24th.	William Preston, attacked in the same manner as the preceding; violent pains in the thighs and legs, *inflamed eyes*, &c. &c.	Calomel: gr: v statim.
25th.	Bowels open, pains in the back and limbs increased, the whole body covered with livid blotches, tongue black and dry, pulse low. Died at half-past one A.M.	Pulv: cinchonæ ℥ ij tertia q:q: hora ex vino rubro.
Oct. 25th.	James Barton, attacked in the same manner, and had the same symptoms, only the addition of great oppression of the breast.	Calomel: gr: v statim. Empl: cantharid: pector:

Date.	*Name and Symptoms.*	*Treatment.*
26th.	Breast and arms covered with large livid blotches: pains continue.	Pul: cinchon: 3 ij tertia q:q: hora ex vino rubro.
27th.	Singultus, pains little abated, *eyes very red,* tongue and lips black, skin hot and dry.	℞ Camphor: gr: iv Pulv: antimon: gr: iii. M: i. tertia q:q: hora
Eveng.	Vomited a fluid resembling coffee grounds, pains lessened, pulse low, pain at the pit of the stomach.	Port wine.
28th.	Died at 2 A. M.	
Oct. 27th.	Edward Robinson, attacked in the same way as the preceding, but when brought to the hospital, unable to articulate; was almost instantly on being put to bed seized with the black vomit, and died on the 28th, at 4 in the morning.	
Oct. 29th.	Sergeant Hardiman, attacked as above; great oppres-	Antimon: tartarisat: gr: iij statim.

Date.	*Name and Symptoms.*	*Treatment.*
	sion, and nausea, *eyes inflamed*, &c. &c.	H: S. calomel: gr: v
30th.	Respiration difficult, pulse feeble, vomited a large quantity of bile, and had several fetid stools.	Emplast: cantharid: pector: Mist: camphor: ℥ i tertia q:q: hora.
31st.	Died.	
	The whole body *as usual turned of a dusky yellow*, with livid blotches on the breast, legs, and arms.	
Oct. 29th.	Sergeant M. Inglis, attacked in the usual manner; great pains across the forehead, back and lower extremities, tongue dry and yellow, bowels costive, eyes red.	Antimon: tartarizat: gr: iij statim. Calomel: gr: v.H:S.
30th.	Stationary	℞ Calomel: gr: j. Pulv: antim: gr: iij. M: i tertia q:q: hora
31st.	Pain in the head much lessened, pulse feeble, tongue moist on the edges.	Repetatur pulv: ut heri.

Date.	*Name and Symptoms.*	*Treatment.*
Nov. 1st.	Stationary; bowels open, skin moist.	Repetatur.
2d.	Pulse more natural, tongue and skin moist, bowels regular, pain in the head entirely removed.	Repetatur.
3d.	Much better.	Repetatur:
4th.	Continues to recover. N. B. This and the following man were in the Lazaretto.	Pulv: cinchon: ℥ j tertia q:q: hora ex vino rubro. Continued this last till this morning.
Oct. 28th.	Francis Gooch, attacked in the usual manner, and had the same symptoms.	Antimon: tartarisat: gr: iij. statim. H: S: calomel: gr: v.
29th.	Tongue moist, but yellow, bowels rather costive, pain in the head less. Took the calomel and antimonial powder, until his recovery.	Repetantur calomel: gr: v.

Name.	*Symptoms and Treatment.*
James Walley. —— Miens.* Darby Fergusson. Richard Green. James Knight. Joseph Webb.†	These six were attacked with the same symptoms, and all recovered under the same treatment as Sergeant Inglis and Francis Gooch.

" The lancet was used only in one instance, where " the patient complained of difficult respiration; he " was shortly afterwards seized with spasms, and " died the same night.

" *The cold affusion was not recommended,* but I " tried it in one case, in the Lazaretto, on a Spanish " Friar, who remained insensible for several days, " with all the worst symptoms, except the black " vomit; the effect of it was profuse perspiration; " at the same time, he took the antimonial and " calomel powders, with the camphorated mixture, " till all the symptoms were removed.

" *None of the bodies were examined after death.*"

* This man does not appear in the surgeon's return.

† This last man appears by the surgeon's return to have died.

RETURN of the Men who were seized with the FEVER, in the 7th Royal Veteran Battalion, from 11th to 30th October, 1810, after which no Case occurred.

Men's Names.	When seized.	When Convalescent or dead.	Died.	Number of Days.	Cases in which the Black Vomit occurred.	Nature of the Fever.	Remarks.
Thomas Nottage.....	11th October	15th October	Died	5	———	Bilious remittent	
William Harvey.....	15th October	4th November	——	20	———	Typhus	
Darby Ferguson	19th October	5th November	——	9	———	Bulam	
Richard Green.....	22d October	25th October	——	4	———	Bulam	
James Barton.....	25th October	28th October	Died at 3 A. M.	3	Occurred	Bulam	
Edward Robinson.....	27th October	28th October	Died at 5 next morning.		Occurred	Bulam	
William Philips.....	28th October	29th October	Died	2	———	Bulam	
Francis Gooch.....	28th October	3d November	——	7	———	Bulam	
James Walley.....	28th October	9th November	——	11	———	Bulam	
John Lucas.....	28th October	6th November	——	9	———	Bulam	
Joseph Webb.....	28th October	31st October	Died	4	———	Bulam	
Sergeant Hardiman...	29th October	31st October	Died	3	———	Bulam	
Sergeant M. Inglis	29th October	5th November	——	8	———	Bulam	
James Knight	30th October	13th November	——	15	———	Bulam	
William Muir.....	2d November	14th November	Died	13	———	Bilious remittent	
Benjamin Hague.....	6th November	13th November	——	7	———	Bilious remittent	
James Jeffreys.....	7th November	13th November	——	7	———	Bilious remittent	Taken ill in the Hospital.

Abstract.—			
Bulam.....	13	died	6
Bilious remittent	4	died	2
Typhus.....	1		0
	18		8

Gibraltar, January 22, 1811.—Since the 30th of October, five cases of the Bilious remitting Fever have occurred, but no case of the Bulam.

Signed, J. Kidston, Surgeon 7th Royal Veteran Battalion.

APPENDIX No. II.

Copy of a Case of Fever, extracted from the Medical Journal of H. M. Ship Conqueror, referred to at page 259.

MALIGNANT FEVER.

September 20th, 1804, at Sea. William Collins, marine, aged 26.

Vomiting and griping, languor, debility, pulse quick, small and hard; pain in the head, back, and extremities; eyes full, heavy, and a little yellowish; tongue covered with a dark dry fur; griping pain in the bowels, accompanied by vomiting.

℞ Ipecac: pulv: gr: xx antimon: tartarizat: gr: ij statim: sumend.

A. M. Vomiting abated; griping continues, but is very costive.

℞ Calomel: gr: v pulv: jalap: gr: x stat: sumend.

28th. Violent griping; has had no stool; pulse fluttering, great debility, dejection of spirits, petechiæ on various parts of the body; vomiting at times.

℞ Natron: vitriolat: ℥jß manna ℥j infus: sennæ ℥ v.

M. Capt: cochlear: ampl: secunda quaque hora, donec alv: responderit.

A. M. Has had four motions, and his bowels appear much relieved from the griping; the stools were dark and very offensive: urine high coloured, respiration difficult, pulse intermits, great languor and debility.

℞ Camphor gr: iv pulv: antimon: gr: ij calomel gr: j confect: aromat: q: s: ft: bol: tertia q: q: h: s: superbibend: Infus: Cinchonæ.

29th. Had a very restless night, pulse now 143; tongue dry and parched; sighs much, eyes dull and heavy; a profuse hæmorrhage has just issued from the nose and mouth.

September 29th. Died.

SURGEON'S REMARKS.

This case appeared evidently to be a *typhus putrida, and was, no doubt, of the same nature as the fever at Gibraltar,* as this young man (who was of a full habit of body) went on shore several times at Gibraltar, and was observed to mix with the inhabitants very much. Three days after we sailed he was attacked, and died the third morning after about eleven o'clock. A few minutes before his death, he was attacked by a violent hæmorrhage from the nose and mouth; suddenly turned yellow, then black, with a violent shivering, and departed.

APPENDIX No. III.

Case of Carthagena Fever, treated on board H. M. S. Leyden, by Mr. Rae, Surgeon.

October 20th, 1812. Captain A. M. ætat 35, of a slender habit of body, and infirm constitution, who had suffered considerably from disease in tropical climates, complained this morning of pyrexia, intense head-ach, with a hot dry skin, frequent pulse, rather weak, furred tongue, thirst, nausea, costiveness, pain of the back and limbs, and general uneasiness. Was seized last night, and ascribes it to exposure to the sun. Not doubting his complaint to be of the prevalent remitting kind, and aware of the sudden debility which frequently occurs, I did not think it prudent to bleed him; but, as an alternative, strong refrigerants were given :—viz.

℞ Hydrarg: submuriatis gr: vj pulv: jalap: gr: xv fiant pilulæ tres stat: sumend.

Decoct: hordei cum potassæ nitrat: ℈j in sing: libris pro potu communi.

21st. Pills operated indifferently; head-ach less during the night, but aggravated this morning; pyrexia nearly the same.

℞ Hydr: Submuriatis gr: ij Pulv: Antimon: gr: iij fiat pil: secunda quaque hora sumend. Potus ut heri.

22d. Passed an indifferent day and night; head-ach continues; pyrexia nearly the same; nausea, and vomiting of bile.

℞ Pil: hydrarg: gr: v tertia quaque hora. Haust: salin: effervescens p: r: n: sumendus. Decoct: hordei cum potassæ nitrate pro potu communi.

23d. Head-ach still continuing, with a firmer pulse; last evening the temporal artery was opened, and about ten ounces of blood taken away, which relieved his head-ach; and there being nausea and vomiting, a blister was applied to the region of the stomach: this morning somewhat better, though there is still considerable fever, nausea, and vomiting; pulse firm, mouth slightly affected

Detrahatur sanguinis ex arter: temporal: ℔j.

Prætermitt: pilulæ.

℞ Succ: limonum ʒß potassæ subcarbon: ℈j spt: æther nitrosi gtt: xxx aquæ ʒj ft: haust: tertia quaque hora sumend: affric: femora cum ung: hyd: fort: ʒ ß. Pro potu acid: vegetab:

24th. Head-ach was much relieved by bleeding; being troubled with acid eructations, small doses of magnesiæ carbonas were given, and decoct: hordei in lieu of the acid drink. Having had many bilious evacuations during the day, an anodyne was given at bed-time, which procured some rest; to-day the fever abated, and the nausea and vomiting continued in some degree.

Repetantur frictiones bis die, habeat haust: salin: p: r: n: decoct: hordei ad libitum pro potu ordinario cum potass: nitratis ℈j in sing: libris.

25th. Would not submit to the frictions yesterday, or take any medicines whatever; mouth slightly affected, eructations gone, nausea continues, with retching at intervals.

Repetantur frictiones bis die. Acidulated drink to be repeated.

26th. Temper become so irritable, that it is with great difficulty he can be prevailed on to admit of any means essentially necessary to his recovery; pyrexia very considerable, and no evident remission hitherto; nausea less; however he will take no medicine internally, bowels open.

Repetantur frict: et potus acid: vegetab:

27th. Continues nearly the same; no remission; occasional nausea and vomiting, though less than formerly; however he still refuses to take any medicines, or submit to the frictions.

Repetatur ung: hyd: bis die.

℞ Ol: ricini: ℥j mane sumend: in haust: aquæ c̄ Sp: lavend: compos: gtt: aliquot.

28th. Was with great difficulty prevailed on to take the oil, which was attended with good effect; evacuations green and fetid; had a short remission in the evening.

℞ Aq: fervent: ℔j potassæ supertart: ℥j sacchar. purificati ℥j misce pro potu ordinario de die, injiciatur: enema aperiens pro re nata.

29th. Had a remission last evening again, during which he was prevailed on to take a little bark in decoction; several evacuations of a dark greenish appearance and fetid.

Repetantur frict: et enema: p: r: n.

Remittente febre repetatur decoct: cinchonæ c̄ spt: lavend: compos:

Sago and wine.

30th. Two dark coloured scanty evacuations, procured by enemas; a remission last evening, during which he took about ℥ij of decoct: cinchonæ, with some sago and wine. This morning another remission, pulse 84, and soft; skin cool, tongue foul but moist; languor and indolence of motion; cannot bear to be disturbed; slight ptyalism; will not submit to the frictions.

℞ Decoct: cinchonæ ℥ij spt: lavend: c: gtt: xxiv fiat haust: secunda quaque hora a remissione febris sumend.

Repetantur enema et potus potassæ supertartratis.

Gruel and wine.

Prætermitt: frict: hydrarg:

31st. An exacerbation during the day; had two enemas, which procured several bilious evacuations; a remission in the evening, which continued all night: has taken about ℔j of decoct: cinchonæ with some wine and gruel. This morning skin cool, pulse 82, and soft, tongue foul but moist.

Repetatur cinchon a secunda quaque hora, cum mist: camphoræ et sp: lavend: compos:

Repetatur enema pro re nata.

Sago and wine.

Nov. 1st. An exacerbation took place with a cold fit at 2 P. M. a hot stage ensued, but no sweating; remission about 11 P. M. which still continues; pulse 82, and soft, tongue foul, but moist, lowness and depression of spirits.

℞ Decoct: cinchonæ ℥ij tinct: colomb ʒj confect: aromat: gr: x haust: quaque hora sumend:

Repetatur enema p: r: n: ante accessionem febris, capiat haust: anodyn: volat:

Sago and wine ad libitum.

2d. A paroxysm commenced again about 2 P. M. some incoherency during the last stage; about 10 P. M. a slight degree of perspiration,

at 11 the remission complete. Tried the bark in substance, but his stomach could not bear it; bowels kept open by means of enemas; pulse 80, but soft, tongue loaded but moist, languor and drowsiness.

Repetantur omnia ut heri.

3d. Paroxysm commenced about 7 o'clock last evening with a cold fit, and went through the successive stages, the last rather indistinct; remission at midnight, took acidulated drink during the paroxysm; but one scanty bilious evacuation during the night, and another in the morning, by means of an enema. To-day very low and spiritless, cannot bear to take medicine, or be roused from his drowsy state; pulse 82, of good strength, tongue loaded, skin cool.

℞ Decoct: cinchon: ℥ij tinct: colombæ ʒß, confect: aromat: gr: x mist: camphoræ ʒij. secunda vel quaque hora sumend.

Sago, gruel, &c. ad libitum.

4th. Paroxysm commenced at 11 P. M. and went through the successive stages; perspiration more general, remission about 4 A. M. had two evacuations, one from an enema, and another from p: rhabarb: ʒß which was mixed with his bark, but not without nausea, and vomiting. This morning nearly as yesterday.

Repetantur omnia.

5th. Had an enema last evening, which procured two copious evacuations, still dark and rather fetid; paroxysm commenced soon after midnight, and remission about 4 A. M. sweating stage not very distinct.

Repetantur omnia.

6th. Continued easy during the day, and slept well in the night; no return of fever; in the evening was troubled with hiccough and eructations, which were relieved by a draught of magnesiæ carbonatis ℈j. and aquæ menthæ pip: ℥j. Had several loose evacuations, stomach rather irritable, and unable to retain the bark.

℞ Acid: sulphur: dilut: gtt: xv quarta quaque hora sumend: in cyath: aquæ.

Sago, gruel, soups, &c.

Repetatur enema si opus sit.

7th. Continues to do well; a slight epistaxis during the night, which soon ceased of its own accord; bowels kept open by enemas, as he has a loathing for all kind of medicine; stomach less irritable to-day.

Repet: acid: sulph: dilut: quartis horis.

Gruel, soups; with a moderate quantity of wine.

Repetatur enema pro re nata.

8th. Continues to do well; tongue clean, pulse 82, and soft, skin cool, and perfectly free from fever.

Repetatur acid: sulph; dilut:

Soups, gruel, and wine ℔iß.

9th. Passed a very good day, and had several loose dark coloured evacuations; a degree of feverishness commenced this morning at two, which still continues, though somewhat abated; pulse 92, of good strength, skin hot, tongue dry, but little or no thirst.

℞ Hydrarg: submuriatis, pulv: antimon: ānā gr: iv: mane sumend:

Solut: supertart: potassæ pro potu ordinario.

10th. Pyrexia continued until about four o'clock this morning, when a remission took place; medicine operated well, and the successive stages of the paroxysm were distinctly marked.

℞ Decoct: cinchon: ʒiij acid: sulph: gtt: x fiat haust: quaque hora sumend:

A little gruel and wine.

11th. Paroxysm commenced with slight rigors yesterday evening at half past nine, and went through the several stages until midnight; when it again remitted. Took two pills of extr: colocynth: comp: cum hydrarg: submuriat: which did not operate; and towards the evening, had a dose of pulv: jalap: ē supertartrat: potassæ, which produced several very dark fetid evacuations; since the remission has been using the cinchona as prescribed yesterday.

Siquando febris interveniat, ℞ hyd: submuriatis gr: ij pulv: antimon: gr: iv secunda quaque hora sumend:

Solutio supertartratis potassæ pro potu communi.

Injiciatur enema pro re nata.

12th. Several free stools since yesterday, and during the night, of a more natural appearance; paroxysm about half past nine P. M. and remission about eight. This morning free from fever.

℞ Decoct: cinchon ʒij acid: sulph: dilut: gtt: vj f: haust: secunda quaque hora sumend: cum tinct: opii gtt: vj.

Gruel and some wine.

Interveniente febre, repetantur pil: hyd: submur: et pulv: antimonial: cum potu ex solut: supertart: potass:

13th. Paroxysm commenced with a shivering at 4 P. M. remission at 2 A. M. bowels open, appetite tolerable.

Repetantur omnia ut antea.

A little sago and wine.

14th. Paroxysm at 4 P. M. less severe than the former; remission at 12.

Repetantur cinchon: et acid:

Injiciatur enema pro re nata.

Repetantur pilulæ pro re nata.

Sago and wine.

15th. Paroxysm last night at 8, and remission at 2 A. M. Mouth considerably affected.

Prætermittantur pilulæ.

℞ Decoct: cinchon: ℥ij tinct. calombæ ʒiij mist: camphoræ ʒij ft: haust: tertia quaque hora sumendus.

Repetatur enema si opus sit.

Sago, gruels and wine.

16th. No paroxysm last night, and to-day quite easy, only for the ptyalism, which is rather severe; bowels open, appetite tolerably good.

Repetantur omnia ut heri.

17th. No return of fever, and perfectly easy in every respect except from the ptyalism; pulse 90, bowels regular.

℞ Ol: ricini ʒj mane sumend: in haust: aq: menthæ pip.

Repetatur cinchon: pro re nata.

Sago, soups, &c.

Injiciatur enema si opus sit.

18th. Oil operated well; mouth nearly the same.

Repetantur decoct: cinchonæ, &c.

Sago, gruels, soups, &c.

Vin: ℔j utat: garg: mellis acetati pro ore.

19th. Continues nearly the same; mouth still much affected; pulse 90, takes occasionally some gruels, soups, &c.

Repetatur cinchon: et enema pro re nata.

23d. Little alteration since the 19th; now refuses to take the bark, or any medicine whatever; in consequence of which he had a paroxysm last evening about 10 o'clock: bowels open; ptyalism somewhat less, pulse frequent and less irritable.

Gruels, soups, &c.

25th. Paroxysm returned last night, strength more impaired, ptyalism less, bowels open; refuses all medicine, and subsists on a little gruel and wine; countenance pale and bloated, pulse frequent and weak.

26th. Paroxysm again last night; becomes daily weaker, and still refuses medicine; pulse 116, even during the remission; takes a little gruel and wine occasionally.

27th. No paroxysm last night; however he rested very indifferently; pulse frequent and weak; sunk into a lethargic state, from which he will not suffer himself to be roused; seems quite resigned to his fate, and still refuses medicine.

Habeat jus: Bovill:

29th. No paroxysm since last report; continues still in a sort of indolent state, and will not be roused, although his only real complaint is debility. Still refuses medicine, and takes very little nourishment. Pulse intermitting.

Sumat quicquid vult.

30th. Paroxysm to-day at 11 A. M. bowels regular, and ptyalism almost gone; however he still refuses medicine, and takes very little sustenance.

December 1st. No return of fever, and seems on the whole better; pulse firm, and less frequent. Took some tea and bread this morning, but still refuses medicine.

5th. This morning went on shore nearly in the same state, as he continued to refuse all medicine, and took very little sustenance of any kind.

He continued to refuse all medicine, and resist every means used for his recovery; he thought his time was come, and was therefore contented to die.

After lingering for a few days, he died dreadfully emaciated.

WILLIAM RAE, *Surgeon*,
H. M. S. LEYDEN.

APPENDIX No. IV.

Fever of 1813, *in Gibraltar.*

The fever of this year differed little from that of 1804, except by being in general very much milder.

In some cases the attack commenced with great pain in the head, back, and calves of the legs; the countenance was flushed, the eyes at first appeared brilliant and turgid, but soon became red and inflamed, with more or less intolerance of light. The pulse was strong and full, and in some cases at the commencement not exceeding 100; thirst not very urgent, bowels constipated. In others a sensation of cold was felt along the spine, with a degree of chilliness rarely amounting to rigors, followed by the flushed countenance and inflamed eye, with great and marked determination to the brain. The tongue was at first white, but as the disease advanced, it became brown in the centre, while the edges remained florid. Consi-

derable anxiety with prostration of strength was evinced; oppression about the præcordia, and a sense of heat in the epigastric region.

In other cases the patient was seized from the first moment of his attack, with a vomiting of a bilious matter, which obstinately continued, and in all severe cases irritability of stomach came on; every article of food and drink being immediately rejected, to which, after a remission, succeeded constant hiccough, and the vomiting of a matter resembling coffee grounds. The tongue now became black, and the teeth loaded with sordes; great debility took place, with suppression of urine, twitching of the muscles of the face, general restlessness, and yellow suffusion; hæmorrhages soon succeeded from different parts of the body, when cold clammy sweats and death closed the scene, commonly from the fifth to the seventh day, sometimes later.

The mild attacks commenced with the same premonitory symptoms; but when checked by evacuations at the beginning, generally terminated favourably in a few days.

In several instances, coma was particularly observed, the patient expiring without a groan. In a few, swellings of the parotids took place; the appearance of petechiæ was a very unusual symptom, and yellow suffusion was by no means

a general one. The heat of the body seldom exceeded 100 of Fahrenheit. The young and robust were the greatest sufferers, and in them the irritability of stomach was often simultaneous with the attack, resisting every method of alleviation, the ardent stage being conspicuously marked by severe head-ach and flushed countenance. In those of a spare habit, or advanced in years, the disease was not so fatal, nor were the symptoms so severe or rapid.

The foregoing is a brief account of this fever in its most aggravated state; for these symptoms were not to be found in a very great majority of those attacked; indeed, from the concurring testimonies of several medical gentlemen, who had most extensive opportunities of seeing the disease in all its forms, I am authorized in saying, that four cases out of six were slight, requiring nothing beyond rest, temperance, and open bowels, for their cure.

The morbid appearances observed on the examination of four cases by my friend Mr. Lamert, are as follows:—

"The face, neck, and breast, from being "yellow, a few hours before death became "livid, the whole of the other parts of the "body and extremities remaining perfectly yel- "low. The head was opened in one instance "only, and this was a case in which great

" delirium prevailed, and the patient died in " twenty hours from the commencement of the " attack. An increased quantity of water was " found in the ventricles, and the blood vessels " were exceedingly turgid. In the whole, the " villous coat of the stomach bore marks of " great inflammation ; but with the exception " of turgescency of the vessels, nothing else re- " markable was found either in the thoracic or " abdominal viscera."

In the examination of two bodies, witnessed in the Civil Lazaretto, by Mr. Whitmarsh, Assistant Surgeon of the Naval Hospital, the following appearances presented themselves :—

" The surface of the bodies was yellow, with " livid spots on many places. In the brain, " the vessels of the dura and pia mater in- " feriorly were gorged with blood, and from " the vessels in the substance of that organ, " more blood exuded, when divided, than is " usually the case. The fluid in the left ventri- " cle, in one case, was considerably increased; " the vessels of one lobe of the lungs were dis- " tended, and the fluid in the pericardium increas- " ed in quantity. The liver, in both cases, was " found of an ash colour, and in one somewhat " enlarged. In one, the bile in the gall blad- " der was natural ; in the other, of a thick con- " sistence ; in both, the external vessels of the

" stomach were distended, and the villous coat " abraded; and in one, a considerable quantity " of the matter called black vomit, was found " in the stomach. The blood vessels of the in- " testines were likewise much distended. One " of these men died with suppression of urine; " on examination the bladder was found empty " and corrugated. No particular appearance " was displayed in the kidnies of either."

Mr. Amiel, in his reply to the questions of Mr. Frazer, thus describes the appearances found on dissection:—

" The most general appearances I observed, " were gangrenous spots on the internal sur- " face of the stomach, and a quantity of black " fluid contained in it; liver enlarged, gall " bladder full of a black and viscid bilious " matter, &c. &c. Effusions of lymph between " the brain and pia mater; the ventricles filled " with a yellow serum; and a very remarkable " distension of the blood vessels in the head " of a man, who died on the third day of his " illness. In two men who died with a sup- " pression of urine, a very small quantity of a " dark turbid fluid was found in the bladder." I request the reader's attention also to the morbid appearances, described by Mr. Humphreys in his interesting paper, No. V. in this Appendix.

A variety of modes were adopted for the cure of this disease, but it would be equally useless as impossible to give an account of them here; I shall state, however, that which was most generally employed. Mr. Lamert, who had charge of the sick soldiers in the Naval Hospital, where the numbers were greater than in any of the other establishments, and who deserves great credit for his exertions on this occasion, observes, in a communication with which he has favoured me, that "large doses of calomel at "the beginning, followed by other drastic purgatives, was the most successful practice in "the Hospital under my management;" and in reply to a question of mine, whether mercury proved of the greatest service, when used as a purgative only, or given so as to produce ptyalism? he replied, "when it purged freely it "seldom produced ptyalism, and *vice versa*. "In my practice I preferred the former, and "with marked good effects."* "Upon the "whole" (says the same gentleman) "I have "derived the best advantage from repeated

* Sir James Fellowes, in his publication on the Pestilential Fever of Andalusia, speaks highly of the utility of calomel as a purgative; but adds, "I never saw any advan- "tage from the large quantities of mercury, recommended "to be employed in this disorder."—(Page 406).

" strong purgatives, sponging the body with " vinegar and water when the heat was exces- " sive, and keeping the patient in the first in- " stance extremely low."

Mr. Glasse, Surgeon to the Forces, in a communication he has obliged me with, states, that in his practice, he was very successful by the use of calomel, beginning with large doses to evacuate the stomach and bowels, and when this was accomplished, continuing it in small doses till the mouth was affected. On enquiry afterwards as to the comparative effect of this medicine when employed as a purgative, or with a view to affect the system; he admitted, that ptyalism was not necessary in all cases where copious alvine evacutions were obtained in the first instance.

The practice detailed above was more generally pursued than any other; and it has been a common observation that few or none of those who died were salivated. When the patient began to sink, the usual routine of stimulants was resorted to, and blisters were applied with good effect to the region of the stomach, &c.

It is much to be lamented that blood-letting was so seldom used; as from the symptoms, as well as the morbid appearances found on dissection, it is unquestionably a remedy of the highest value in this devastating disease. As a full and

complete proof of this, I beg the reader's particular attention to the statement of Mr. Humphreys in this Appendix, which, with the other testimony to be found on this head in my reply to Mr. Pym, will, I hope, convince every unprejudiced mind, that if employed sufficiently early, and carried to proper extent, blood-letting might have proved the salvation of thousands.

In some cases, the practice of giving olive oil, as it has been administered in Spain, was had recourse to, and taken in doses of from six to eight ounces, often produced vomiting and purging, as is said, with good effect.

Having thus presented an outline of the symptoms, morbid appearances, and remedies employed, I now proceed to that part which has occupied a great share of the attention from the public at large, as well as from medical gentlemen; namely, the importation and subsequent propagation of the disease by contagion.

The fever of 1813 commenced, as did that of 1804, about the beginning of August. This was preceded by easterly winds and sultry weather, with calms; the thermometer standing in the shade generally at 80 of Fahrenheit. As usual, the disease was said by some to have been imported, and in a letter from Sir Joseph Gilpin, inserted in the Edinburgh Medical

Journal of July 1814, a paper is brought forward from a person of the name of Cortes (who practises in Gibraltar by virtue of a certificate from Mr. Pym) as proof of this, and fixing the period of its importation. A document coming from such a source, certainly must be viewed with suspicion; and when, as hereafter will be abundantly shewn, we find the disease cannot be carried even a few yards out of the Landport Gate, under the most favourable circumstances; how are we to credit this story of its importation? But, independent of this, several cases of the epidemic had made their appearance in the garrison, previous to those in City Mill Lane being heard of. Mr. Glasse has assured me, that he suffered an attack of the epidemic some time before the 11th of August; and Mr. Amiel, in the paper before alluded to, states that "bilious remittent fevers were very pre-"valent in the summer of this year, which, as "the autumn approached, assumed a more ag-"gravated form, and two gardeners died in "less than five days in my neighbourhood; "which was prior to, or cotemporary with, "those in City Mill Lane." And before this a number of cases of fever, attended with yellow suffusion, and bilious vomiting, had been sent from the San Juan to the Naval Hospital; and one in the early part of the summer after a

remission, was attacked with *the black vomit,* and expired in eight hours from the date of his relapse.

Mr. Gardiner, Surgeon of the Naval Hospital, a Member of the Board of Health, who consequently had equal opportunity with Sir Joseph Gilpin, of ascertaining how far the statement of Cortes was to be depended upon, thus expresses himself to me in a letter dated in November 1813:—

"Do not suppose I consider this the Bulam "or imported fever; no, my dear friend, the "disease was engendered by an excessive popu- "lation; houses filthy, and crowded beyond "all possibility of conception; for months I "called the attention of the Board of Health to "this subject; I repeatedly told them, that while "we were sitting to devise means to keep out "the plague, the seeds of disease had taken "deep root within." In conversation, Mr. Gardiner gave me also another very good reason for the opinion he held, which was, "that the "disease did not spread from any focus, but "broke out in fifty different places at once."

The ships in the bay also suffered more or less, which, as they had no communication with the shore, but through the medium of the Health Office, places the morbid effects of the atmos-

phere in a strong point of view; while those in Algesiras Bay entirely escaped.

I know it has been said the diseases were not the same, that in the ships being much milder; it should, however, be recollected, that in the instance of the fever at Cadiz, which history is given by Dr. Lind, the men belonging to the British men of war who were taken ill by going on shore, had the disease in a much less severe manner than the inhabitants of that city. The following fact will, however, remove all doubt on this head. The Partridge, of 20 guns, was sent from the fleet off Toulon, with dispatches to Gibraltar, and arrived there during the period of the epidemic; shortly after leaving this place, on her return to Lord Exmouth, she had a number of men attacked with fever; which the surgeon, in his Medical Journal, states to be of the same nature as that which prevailed on shore at Gibraltar, but adds, "No communica-
"tion whatever was held with the place, except
"by receiving a lightning conductor from the
"Dock-yard, where they were known to be
"perfectly healthy; and some boxes of money
"were received on board from a gun brig,
"which had brought them from Cadiz. The
"brig had no sick whatever on board." This was the Partridge's first summer in the Medi-

terranean, and a more indisputable instance of a morbid state of the atmosphere could not well be adduced.*

* The following is a description of the symptoms of this fever as it appeared in the men of war lying in the Bay, and is extracted from the Official Report of Mr. Rae, Surgeon of the Leyden, addressed to the Transport Board; a copy of which he transmitted to me:—

"It generally came on suddenly, with a sense of languor "and debility; cold rigors; nausea and vomiting of bile; "succeeded by heat, thirst, flushing of the face; head-"ach, chiefly about the forehead; eyes painful, muddy, "and suffused; pain of the back and limbs; often great "soreness of the knee joints, and numbness of the legs. "Frequent deep sighing, and sense of tightness about the "præcordia; a frequent irritable pulse; tongue of a pearly "appearance and tremulous. Belly costive; urine high "coloured; great anxiety, restlessness, and general uneа-"siness. These symptoms continued in a greater or less "degree for several days, sometimes with evening exacer-"bations, accompanied by delirium, or some confusion "of ideas, till towards morning, when a slight diminution of "febrile action restored the patient to his senses.

"About the third day or later, bilious suffusion fre-"quently, though not always, took place; first about the "eyes, face, and breast, and afterwards it became univer-"sal. Dyspeptic symptoms then came on; frequent acid "eructations; singultus; costiveness; great prostration of "strength, and tendency to syncope in the erect posture. "In the worst and fatal cases, colliquative sweats; hurried "respiration; foul mouth; crusted tongue; eruption about

It has been strongly urged by some of the medical officers of the garrison, that the disease

" the lips; sometimes epistaxis, cynanche, roughness of the " voice, and a ferrety redness of the eyes; which, with the " yellowness of the skin and blackness of the mouth, gave " the patient a most horrible appearance."

Mr. Rae remarks, " *none of the attendants on the sick* " *suffered.*"

The following case, with the morbid appearances observed on dissection, communicated to me by Mr. Whitmarsh, Assistant Surgeon of the Naval Hospital, in charge of the establishment on the neutral ground, must remove all doubt of the fever which prevailed in the ships in the Bay, being the same with that which was then epidemic on shore.

" *Case of Lieutenant Lamb, admitted from the Constantine* " *Hospital Ship, about five o'Clock P. M. Oct. 19th,* " 1813.

" Complains of considerable pain in the back, limbs, and " head, particularly across the orbits; prostration of strength " and languor; pulse 90, full and weak; tongue foul; skin " not preternaturally warm. Was attacked last night at 12 " P. M. with symptoms of pyrexia; he has been bled at " noon this day, and an emetic administered on board, and " also a cathartic, which last has not operated. At 8 " P. M. skin hot; excessive uneasiness and anxiety; other " appearances the same.

" Habeat bol: calomel: cum pulv: jalap: statim.

" 20th. Less heat this morning; some rest during the " night; a small quantity of hardened fæces evacuated; pulse

is the same as that described by Dr. Chisholm, which occurred at Grenada in 1793, and that

" 88, and weak; loathing of food; muscular strength much
" diminished.

" ℞ Solut: sulphat: magnes: ʒ ij statim sumend:

" 6 P. M. Heat increased, with moisture of the hands;
" the cathartic brought away a considerable quantity of
" very fetid dark coloured fæces.

" Habeat bol: calomel: cum pulv: antimon: tertia qua-
" que hora.

" Cap: julep: aq: ammon: acetat: ʒ ij tertiis horis.

" At 12, some incoherency; hearing very acute; pulse
" 86, full, and easily compressed; vessels of the eyes very
" turgid.

" Admoveantur emplastra vesicatoria temporibus.

" 21st. Slight remission of febrile heat this morning;
" pain of the orbits alone complained of. Vessels of the
" eyes turgid; countenance flushed; tongue cleaner; pulse
" 90, full and weak; frequent fetid evacuations during the
" night.

" Repetantur medicamenta.

" Admov: emplast: vesicator: nuchæ.

" P. M. Continues in the same state.

" 22d. Appears refreshed from several hours sleep he had
" during the last night; pulse more regular; less heat;
" evacuations continue.

" Repetantur medicamenta.

" In the evening, great anxiety; skin cool; little incohe-
" rency; pulse 90, small and weak; tongue white; mouth
" dry; some thirst.

" Contin: ut antea.

it is in every instance propagated by contagion; while a larger and equally respectable body deny

" 23d. Excessive debility this morning; passed a restless " night; does not complain of pain; constant writhing of " the body; tongue brown in the centre; pulse 98, small " and weak; *vessels of the eyes extremely turgid;* urinary " and fœcal evacuations free.

" Prætermittantur bol: calomel: & Julep: aq: ammon: " acetat: To take a little port wine frequently.

" In the evening, debility rapidly increasing, with tenden- " cy to sleep. Continue the wine and a little bottled porter.

" ℞ Liquor: ammon: acetat: ʒ ij mistur: camphoræ " ʒ viii. M: sumat: cochlear: ij secunda quaque hora.

" ℞ Mistur: cinchonæ ʒ ij.

" Confect: aromat: gr: x. M: haust: ft: tertia quaque " hora sumend.

" 24th. Quiet the whole night; debility extreme; *eyes a* " *good deal suffused, and the surface of the body slightly* " *so;* pulse 90, full and weak.

" Wine and porter continued.

" Admoveantur emplast: vesicator: tibiis internis.

" About ten o'clock seized with a vomiting of a small quan- " tity of dark green bilious matter, very thick in consistence.

" A little brandy and water to be given frequently.

" 25th. Has slept the last two hours; no return of vo- " miting; and awoke with the hand passing over the region " of the stomach.—Expired at 6 P. M.

" *Appearances in the Abdominal Cavity on Dissection, Six* " *Hours after Death.*

" The surface much discoloured; on throwing aside the " parietes of the abdomen, every appearance natural; on

that this is the case; and it is certainly satisfactory, that those who are of the latter opinion have, beyond all question, had the best opportunities of judging correctly.

I have already, in giving the history of the preceding endemics of Gibraltar and Carthagena, brought forward some powerful facts to prove the non-contagious nature, and consequently the domestic origin, of their fevers; and in the course of the following pages I shall add others, which will probably put the matter at rest for ever.

Before, however, proceeding with this part,

" removing the omentum, the blood vessels appeared very " turgid. Liver much enlarged, and of a particularly " white colour; gall bladder empty; spleen and kidnies of " a natural healthy appearance. The external vessels of the " stomach, about its cardiac portion, displayed an inflam- " matory look; on opening the viscus, *the internal coat* " *found croded, and in some places hanging in shreds;* " *the stomach contained seven or eight ounces of a black* " *oily fluid, and a small quantity was traced into the* " *duodenum;* the internal coat of the jejunum shewed traces " of inflammation; urinary bladder distended with urine.

" The situation I was placed in, did not allow me to ex- " amine the brain."

In several other cases, the outlines of which, only, Mr. Whitmarsh has preserved; yellow suffusion, suppression of urine, and discharges of blood from different parts of the body were observed.

I shall solicit the attention of the reader to the following extracts from the first edition of Dr. Chisholm's Essay on the Malignant Fever of Grenada; by which they will be enabled to judge how far the facts I have already related, and am about to state, correspond with that gentleman's conclusions, as applied to the endemics of the places above mentioned.

"I have been thus particular in stating the "progress of this malignant pestilential fever, "(says Dr. Chisholm) chiefly with a view to "demonstrate,

"1st. That it was uncommonly infectious.

"2d. That it arose from human contagion, "heightened by various causes to a pestilential "degree of violence; and,

"3d. That like the plague, it has been com- "municated in every instance, either by actual "contact with an infected person, or by touch- "ing the clothes of, or sleeping in a place "where infected persons have been." (page 99).

Again at page 133,

"Another point subject to much uncertainty, "and a good deal agitated among physicians, "is the distance at which it is possible to com- "municate the contagion. The result of my "observations and enquiries amounts to the fol- "lowing facts:—

"1st. That those who most carefully avoid

" houses where the infection is, are the most
" certain to escape it.

" 2d. That though the disease is in the same
" house, avoiding the chamber of the sick pre-
" vents infection.

" 3d. That the merely entering the chamber
" of the sick, without approaching the diseased
" person, never communicated it.

" 4th. That approaching so near the dis-
" eased person as to be sensible of the fœtor of
" his breath: or of the peculiar smell which is
" always emitted from the bodies of the sick
" in this disease; or touching the bed-clothes
" he lies on, generally occasions nausea, slight
" rigors, and often head-ach at the moment,
" and some hours after, the disease itself.

" 5th. That actual contact, so that the per-
" spired fluid of the sick may adhere to the
" hands, &c. of the healthy person, more cer-
" tainly produces the disease.

" 6th. That touching the wearing apparel of
" a person who is actually diseased, or has just
" recovered from the disease, as certainly com-
" municates the disease to the healthy person;
" and,

" 7th. That frequently the merely passing a
" person infected, or who wears the clothes
" he had on during the existence of the disease,
" in such a manner that the effluvia proceeding

" from them, may be blown on the healthy " person, has produced the disease."

" From hence it is evident, that the infec- " tious effluvia do not extend themselves be- " yond a limited distance from the person or " thing from which they are emitted; and this " distance may be fixed at the utmost, from six " to ten feet."

It would follow from the foregoing conclusions, that those who shut themselves up in their houses, and preserved a strict quarantine, should have been preserved from an attack of this fever, as was *uniformly* the case at Malta during the plague; but, as is well known, no such immunity was enjoyed by the inhabitants of Gibraltar, which the following instances will very clearly shew. Mr. Keeling, Mr. Lindblad, and Mr. Morison, respectable merchants, residing in Irish Town, on the first alarm of fever, placed themselves and families in *strict quarantine,* yet they were all attacked with the disease. A Mr. Jacks and his wife, who had retired to a place called Inness's Farm, situated more than two-thirds of the way up the rock, and at a considerable distance from any other house, some time before the fever made its appearance, and being supplied with every necessary on the first alarm, placed themselves in *strict quarantine;* yet they were both attacked with

the disease, and perished. The reader is also referred to Mr. Humphrey's paper in the Appendix, where they will find two more instances of persons being attacked in quarantine; and in my reply to Mr. Pym, I shall have occasion to mention others of the same nature.

The preceding *facts*, prove beyond all doubt, that the disease could not have been communicated to these families by contagion; here was neither actual contact in any form or exposure to the effluvia of diseased persons, yet we find them attacked with the prevailing malady. But it is not necessary to let the proof of its non-contagious nature rest upon this evidence alone, as the fever of 1813 furnishes ample and conclusive testimony on that head.

Mr. Lamert is decidedly of opinion that the disease is not contagious. This gentleman has served as a medical officer in the army for twenty years, and having witnessed the dreadful havoc committed by the yellow fever, among the British army in St. Domingo, during the years 1796, 1797, and 1798, is well qualified to give a correct opinion on this interesting subject. He reports thus; "At the beginning, I did not consi- "der the fever of 1813 to be of a contagious "nature; and being subsequently appointed "to the superintendance of the General Mi- "litary Hospital, established *pro tempore*, in

" the Navy Hospital, I had ample opportuni-
" ties of ascertaining how far it operated as
" such. The ward-masters, orderlies, nurses
" and other women, employed, were selected
" from persons who had previously undergone
" the disease, as far as the requisite numbers
" could be found; but the whole that were ne-
" cessary could not be procured; in conse-
" quence of which, *eleven persons were sent*
" *who had never been attacked;* and although
" they were from the nature of their duties,
" more exposed to persons labouring under the
" disease, than any other class of people could
" be, *yet they all escaped,* as did my assistants,
" Mr. Brady, 26th regiment, Dr. Burke 37th
" ditto, and Hospital-mate, Leonard."

Mr. Glasse, who has served in Gibraltar for ten years, and witnessed the fatal fever of 1804, as well as those of 1810 and 1813, is also firmly of opinion, that the disease is not contagious; " For my part, (says he, speaking of
" the fever of 1804) I think the same atmos-
" pheric influence, which produced it in other
" parts of Spain, caused it in Gibraltar, and it
" was there most fatal, from the crowded and
" filthy state of the garrison."

And again, when speaking of that of 1813—
" I have an idea, that the aggravated disease
" of the autumn, is the common fever of the

" climate, rendered so by the season, and aug-
" mented in its violence, by the very dirty and
" crowded state of the garrison; and, I am in-
" duced to believe this, by the sudden and be-
" neficial effect produced by the heavy rains at
" this season, washing away and cleansing the
" stagnant drains."

" I do not attribute it to foreign introduction,
" (says Mr. Amiel) and I found this opinion
" on the following considerations. The rise
" and progress of our epidemics, have never
" been traced in a satisfactory manner, from a
" single point of contagion, to a gradual num-
" ber of individuals or families; and instead of
" creeping slowly from one district to another,
" cases have made their appearance unconnect-
" ed and scattered at different points; and in
" some instances, it has spread with the rapi-
" dity of the electric fluid, attacking persons
" who had never approached the sick, or any
" assignable source of contagion. An indivi-
" dual labouring under our epidemical fever, on
" being removed to a pure air and ventilated
" place, such as the neutral ground, or Europa
" Point, did *not communicate the disease to*
" *those in the closest contact with him;* this
" observation has been confirmed in many
" instances during the epidemic of last year,
" amongst the foreign recruits quartered at the
" Brewery Barracks. The depôt consisted of

" between five and six hundred men, sixty of " whom were permanently employed in the dif- " ferent departments in town, or as servants to " officers. Those men, on being attacked with " the epidemic, (and I believe not one escaped) " generally came to the barracks, where they " lay all night in a crowded ward, and some- " times by concealing themselves, they continued " two days in the same place; yet I never ob- " served, that either their breath, or the efflu- " via of their bodies or clothes, had proved in- " fectious to their companions.

" Forty women of that depôt, who had been " prohibited passing Europa Gate, remained " perfectly healthy, *although I had seen some* " *of them sitting on the same bed where a* " *man was lying in a fever.* Out of the four " thousand Spaniards removed last year to the " neutral ground, a few died of the fever then " prevailing in the garrison; but it is a well " known fact, that those only had the fever " there, who were already sick on going out, " and they did not communicate the disease to " any of their neighbours or attendants.

" The inefficacy of the various means which " have been repeatedly employed to stop the " progress of the epidemic; such as sending " out the sick, shutting up their houses, prohi-

" biting meetings of all kinds, &c. &c. and on " the contrary, the success which has evident- " ly attended the measures of removing to " a pure air, those who seemed more suscepti- " ble of catching the fever, as was done last " year with so many thousand inhabitants, and " this year with the regiments who were grow- " ing sickly, clearly proves, that our epide- " mical fever is not easily removed from its " focus, or exported to another place."

" Various cases of this fever have been ob- " served in the garrison, while there prevailed " no epidemic, nor any suspicion of an im- " ported disorder; and I mention the two fol- " lowing as worthy of notice; the first has " been witnessed by the Deputy Inspector of " Hospitals of this place."

" Dominic Benedetty, an Italian by birth, a " stout man, of a strong constitution, about 26 " years of age, was admitted into the Hospital " of foreign recruits on the 29th of August, " 1812. He had been taken ill at two o'clock " in the afternoon, at Land Port, working at " the pump, when he was suddenly attacked " by great shiverings, and a severe head-ach, " which continues. He vomits yellow and " green bile, the pulse is quick, skin hot and " dry; eyes reddish; complains of severe pain

" in the back and joints, and has great anxiety. " 30th, Has passed a very restless night; is " greatly tormented by retching and vomit- " ing; continual sighing; countenance depres- " sed. 1st Sept. Retching continues, any li- " quid he takes is thrown up instantly; eyes " a little yellow; lies very uneasy in his bed; " has great oppression at the pit of the sto- " mach; bowels costive. 2d. Has passed a very " bad night; has been delirious; is now sensi- " ble, but rather comatose; retching continues, " has vomited a quantity of a dark fluid, re- " sembling coffee grounds; skin of a natural " temperature. 3d. Skin yellow; has had hic- " cough the greater part of the night; very " often vomits a dark fluid, which continues now " and then with hiccough; urine high coloured, " and in small quantity. 4th. Skin is now of a " dark yellow; the patient is sensible; has passed " several black stools; vomited only once since " last night; hiccough has not returned. 5th. " The patient feels greatly relieved; vomiting " and hiccough did not return; pulse quite re- " gular and soft; pain of the stomach relieved; " retains what he drinks; gums are sore, and " tongue swelled (effects of mercury). 6th. " Has had a few hours of good sleep; continues " better; relishes sago and broth. 7th. Conti- " nues better; is convalescent."

" James Rootz, admitted into the Hospital " of foreign recruits, 26th Dec. 1812. Is a " German, full habit, middle stature, about " 25 years old; was taken ill on the 24th " inst. and remained in town without reporting " himself; the leading symptoms are a violent " pain in the head, back, and joints; skin hot; " pulse quick and low; tongue foul; eyes dull; " bowels costive; complains of sickness at his " stomach.

" 28th Dec. The patient has constant retch- " ings, and vomits a green and yellow bile- " like matter; pulse continues quick; eyes yel- " low; and a yellowness about the chest.

" 30th Dec. The patient has an hæmorrhage " from the nose; pulse about 130; tongue " covered with a brown fur; continual tossing; " skin dark; yellow urine, very scanty; no " vomiting since yesterday.

" 31st Dec. Hæmorrhage from the nose con- " tinues now and then; gums bleed; tongue is " quite black; has swallowed a quantity of blood: " has passed many black stools in his bed; is " delirious; sometimes lying quietly, at other " times attempting to leave his bed, and call- " ing out in excruciating agony; has not passed " any water since yesterday; has the hiccough, " and in the morning of the 1st of Jan. died."

" Those two cases of fever, attended with the

" two great characteristics of the prevailing " epidemic; viz. yellowness of skin, and the " black vomiting: which I selected among " many others, I observed from time to time, " while the garrison was reputed to be very " healthy, indicate, that our epidemical fever " has no need of the introduction of a foreign " seed, but that it originates spontaneously " here; and has, probably, for its primary and " essential cause, putrid exhalations floating in " in the atmosphere."

The facts here stated by Mr. Amiel, receive strong confirmation from the testimony of Mr. Glasse; whose extensive opportunities of observing this disease, and long residence in Gibraltar, I have before had occasion to allude to. In the communication I received from this gentleman, he says, " During the spring and au- " tumn, I have been in the habit of seeing " solitary cases of fever attended with *black* " *vomiting*, and other severe symptoms, both " in the town and south, without the disease " being communicated to others confined in the " same building."

I may also remark here, in addition to the evidence I have already adduced, in support of the proposition that this fever is *not contagious;* that I have been informed from respectable sources, that Mr. Dow, who had charge of the

Military Hospital at Windmill Hill, during the period this disease prevailed in 1813, is decidedly of opinion that it is not contagious. See also Mr. Humphreys's paper, Appendix No. V. for the opinion of Dr. M'Mullin and the medical officers of the garrison in 1814.

If the facts and testimony I have already given be not sufficient to decide the point in question, I have still others equally powerful and satisfactory to bring forward; and as some of them are furnished by a gentleman, who, while he denies that the disease was imported, still thinks it may have been propagated by contagion; he cannot be suspected of any undue bias in the statement he makes. The only reason, however, which he gives for considering the disease to have been contagious, is, that in many instances it attacked whole families progressively.

A short time after the disease made its appearance in 1813, a Lazaretto for the navy was established on the neutral ground, and Mr. Whitmarsh, assistant surgeon of the Naval Hospital, was placed in quarantine in charge thereof; he shall now tell his own story.

" The Civil Lazaretto is situated on a small " spot, insulated by two arms of the inundation, " and without the projection of the rock on " which stands the Moorish Castle. At the

" commencement of the epidemic of 1813,
" seven seamen were sent from the ships
" in the bay, to this place, in consequence
" of labouring under fever. On my taking
" charge of the naval establishment on the
" neutral ground, September the 28th, these
" men were sent to me from the Civil La-
" zaretto, every one of whom I can aver at
" that time was in the fullest enjoyment of
" health; on enquiring of the medical gentle-
" man in whose charge they had been, as to
" the progress of their indisposition, he told me,
" that 'On the next or second day after their
" admission, they were free from disease; and
" from what he could learn from them, their
" illness arose, some from intemperance, others
" from exposure to wet; and required but lit-
" tle assistance from him.' Several of these
" men had been in the Lazaretto for three
" weeks, and at this period it contained nearly
" two hundred people; and as soon as death or
" recovery removed any of that number, their
" places were again filled up. I should ob-
" serve, that one was the Boatswain of the
" San Juan, who with his wife and daughter,
" were likewise sent to the place in question,
" and though the whole of these people re-
" mained with me till the 3d of November,
" and three until the establishment was broken

" up about the latter end of December, *they* " *never experienced the slightest symptom of* " *the disease.*"

Mr. Whitmarsh likewise states, that several cases occurred amongst the inhabitants sent out to the neutral ground, which were removed when discovered, to the Civil Lazaretto; *yet the fever did not in any instance extend to those around them.*

He also, in his own person, furnishes a very strong proof of the "local habitation" of the disease. In 1813, he was employed as before stated, on the neutral ground, and with a laudable desire to make himself well acquainted with the epidemic, frequently visited the Civil Lazaretto, to see the patients. He says, that in this place, on those occasions, the sick in the act of vomiting, have frequently thrown the contents of their stomachs over him, yet he remained in perfect health. But in 1814, when he resided in the Naval Hospital, *within the garrison,* he was attacked with the prevailing fever.

It has been strongly insisted upon by some, that a person who has once passed through this fever, is secured against a second attack, and I do believe, while they remain in a southern climate, that this is pretty generally the case, as I have had opportunity of remarking in the fevers

of Malta and Mahon; but that it is not uniformly true, the following facts will clearly prove.*

" Many persons " (says Mr. Glasse) " assert " that they have had the disease twice, and the " case of Mr. Callaghan, Wine Merchant, in " Irish Town, is the most convincing, as he " was attended by Dr. Nooth, and Mr. Burd " in 1804, and by myself in 1813, and in both " instances nearly lost his life."

" In a case " (says Mr. Whitmarsh) " which " came under the care of Mr. Donnet, the man " recovered, and was discharged; about a fort- " night afterwards he had an attack similar to " the first."

Mr. Muir, a merchant, came to settle in Gibraltar, a short time before the fever made its appearance in 1813; he had been the preceding year in Surinam, where he experienced a most violent attack of yellow fever, attended with all the worst symptoms of that disease; and hearing the opinion generally circulated in the garrison, considered himself secure. He was however amongst the first attacked with the fever, and died on the fourth day of his illness, with yellow suffusion and black vomit. This

* In my reply to Mr. Pym, many more well authenticated instances will be brought forward.

gentleman had several young men with him as clerks, who had all lately arrived from England; and they having attended the deceased closely during his illness, were kept in quarantine for fourteen days, and then liberated in perfect health.

Mr. Amiel also, in his reply to the eighth query, mentions two cases which he had under his own care, who undoubtedly had second attacks, and he states his being informed, on good authority, of several others. In addition to this, there is very conclusive evidence to be found in " M'Gregor's Sketches," that second attacks are far from being unfrequent. Sir James states, that " on the first of August, " 1796, the first case of yellow fever made its " appearance on board the Betsey Transport, " from which period to the 12th of September, " almost every person on board was attacked " once, *and a great many twice with this* " *fever.*"

Dr. Rush, at page 36, vol. v. gives the names of six persons he attended in 1797, who had previously undergone an attack of the epidemic; and Dr. Curry, at page 15, of his treatise on the Synochus Icterodes, has the following passage; " It is asserted by Dr. Lining, that " those who have once had the disease, cannot " take it a second time; but we have seen " several instances of its occuring here a second

" time, where the circumstances were so un-
" equivocal, that it could not fairly be ascribed
" to a relapse."

If so many cases of second attacks have come within the direct knowledge of the gentlemen just quoted, it is fair to infer, that it is far from being an unusual occurrence. During the fever of 1814, I have reason to believe that *many* were attacked, who had had the disease the preceding year.

It has been contended by some, that Gibraltar is a place where miasmata are not likely to be generated; but as this is an opinion purely hypothetical, it cannot be received as proof. Were the effluvia which produces different diseases cognisable to the senses, or had we an instrument to measure the quantum present in any given space, we might probably be able to speak decidedly on the subject; but until that shall be the case, we must draw our conclusions from facts alone.

In the fever of 1813, the South Pavilion was particularly unhealthy; a number of officers with their servants, who were quartered there, being attacked with fever, especially those who resided on the ground floor:* an examination

* The first men attacked in the 13th regiment in 1804, were precisely in a similar situation.—Vide Fellowes's Reports, page 129.

was made of the premises, when the drains were found running over, the privy overflowing and very offensive, and the kitchen contiguous, filthy, and equally noisome

Mr. Amiel, who appears to have paid much attention to the local peculiarities of Gibraltar, states the following facts. "The population of "Gibraltar has greatly exceeded what can be "admitted into the confined limits of the town, "an evil which was already sensible in 1804, "and has continued until 1813. The inhabitants "being much limited for ground to build upon, "have frequently placed the doors and windows "of the apartment on the same side, and have "by that means made it impossible to have the "air of the rooms sufficiently renewed. The "ground for building on being very dear, and "house rent excessively high, *cellars* and *stables* "have in many places been converted into "dwelling houses, to receive numerous families, "without any regard to their health or accom-"modation; and in other places, a great num-"ber of sheds have been constructed in such a "manner, as to preclude access to ventilation, "affording besides, materials for putrefaction, "by the decayed state in which they are fre-"quently left.

"To overcome the excessive price of house "rent, the labouring classes of people have

" been compelled to crowd themselves in the
" same apartment, and it is not unusual to see
" three rows of beds, one above the other;
" while some are lying on the floor, which is in
" general badly paved, and always damp. These
" people going out early in the morning to pro-
" cure their livelihood, are in the habit of shut-
" ting up the door and windows of the apart-
" ment, which are not re-opened till they come
" home in the evening, when they breathe an
" air deprived of its oxygen, or loaded with the
" effluvia of their bed-clothes. It has been ac-
" knowledged by the Board of Health, in the
" proclamation, dated August the 27th, that the
" first victims of the epidemic have been amongst
" these classes; and I am convinced that such a
" deplorable state of misery, has frequently
" given, among them, a malignant type to a
" disease which would otherwise have been a
" simple ephemeral fever; experience having
" shewn, that whenever a fever appears in one
" of the individuals thus circumstanced, it at-
" tacks every one of them in succession, and
" always with increasing danger

" The privies being placed very close to in-
" habited rooms, and on the hill side, *hav-*
" *ing no communication with the sewers,* be-
" come extremely offensive, especially where
" nightmen are employed to empty them, and

" carry off their contents; and in the houses " where the privies have a communication with " the sewers, cess-pools have been established, " to prevent the drains from being choaked " up, without attending to the danger of hav- " ing the houses or yards undermined by these " repositories of corruption.

" The slope of the sewers being insufficient, " and the largest not being more than two feet " in breadth or in height, they are not equal " to the carrying off the filth which proceeds " from this over-crowded population; and we " frequently see them burst open in the streets, " to the great annoyance of the inhabitants.

" These sewers not being carried on to a " sufficient extent into the sea, discharge all the " noxious matters on the beach, where they " remain, with other putrid substances thrown " from the line wall, until high spring tides " wash them away.

" The offal of the slaughter-house, having " been repeatedly allowed to putrify on the " beach, has been an object the more offensive " to the public, as the least breeze from the sea, " blows its effluvia to the very centre of the town.

" Fresh water being a scarce and expensive " article in this garrison, the poorer class of " inhabitants avail themselves of the opportunity " of collecting rain water, in pipes, tubs, &c.

" which they keep in yards frequented by many " families, and it is not very uncommon, to find " there dirty water, in the highest state of " stench.

" The inhabitants have been directed in many " parts of the town, to carry the filth and sweep- " ings of their houses, to some places which have " been established, to enable the scavenger de- " partment to transport them easier out of the " town; but those nuisances have been fre- " quently left in their deposits long enough to " acquire a degree of putrescency, very noxious " to the neighbouring habitations, and unplea- " sant to those who approach the cart, in the " act of removing them.

" The beach at the north end of the town, " is covered with a quantity of timber of all " kinds, and corrupt materials, which must have " a pernicious effect on the atmosphere; and " the water of the inundation slowly renewed, " covers itself with a green moss, which some- " times drying on the borders, becomes a nursery " of miasmata; and I can assert, from my own " observations, that several men of the foreign " depôt, who have been *successively* employed " at the pump in that neighbourhood, have " been attacked with fevers of a bad type, as is " confirmed by the case of Dominic Benedetty.

" The temperature of Gibraltar in the sum-

" mer months, differs very little from that of the
" islands within the tropics, the thermometer
" rising from 80 to 90 degrees of Fahrenheit;
" the weather is usually dry from the beginning
" of May to the latter end of August; and the
" town protected by high walls on the North
" and South, stands at the western side of a
" steep mountain, whose elevation is about
" fourteen hundred feet, completely obstructing
" all easterly breezes, and rendering, during
" their continuance, the atmosphere of this side
" of the rock, nearly stagnant; and therefore,
" the exhalations which a scorching sun raises
" from the many unwholesome substances above
" enumerated, accumulate from the want of
" ventilation, and becoming a very powerful
" cause of diseases, have most probably aggra-
" vated the bilious remittent fever, which has
" long been known here in its mild form, to that
" malignant type which has lately constituted
" our epidemic. In fact, the summers preceding
" the epidemics of 1804, 1810, 1814, and this
" last summer, have been chiefly remarkable for
" a long continuance of easterly winds; it is
" consequently, highly probable that the epi-
" demic of Gibraltar has a domestic origin, is
" produced by local causes, and has not been
" introduced from abroad as a specific conta-
" gious disease."

STATE of the Weather and Thermometer, Number taken Ill, and Deaths in Gibraltar, 1813.

AUGUST.				SEPTEMBER.						OCTOBER.						NOVEMBER.						DECEMBER.					
Day.	Thermometer.	Wind	Remarks.	Day.	Thermometer.	Wind	No. taken ill.	No. died.	Remarks.	Day.	Thermometer.	Wind	No. taken ill.	No. died.	Remarks.	Day.	Thermometer. 2 PM.	Wind	No. taken ill.	No. died.	Remarks.	Day.	Thermometer, 2 PM.	Wind	No. taken ill.	No. died.	Remarks.
1	79½	E	Sultry.	1	79½	E				1	67	W	47	22	Showery.	1	63	N E	16	3		1	61	N W	4		
2	79½		Ditto.	2	80					2	67½		48	19		2	63		13	5		2	63		1	1	
3	81		Ditto.	3	80	S W			Fresh gale.	3	74		35	16	Very warm.	3	63		17	5		3	58½		1	1	
4	78			4	80				Fine morning.	4	75		48	18		4	62		10	3		4	50				
5	80			5	80					5	75	E	64	21	Hazy.	5	62		21	7		5	58				Heavy rain the morn.
6	80½	W		6	79½					6	75		84	19	Very hazy.	6	62		11	1		6	58				Ditto.
7	79	E		7	80					7	70		72	16	Ditto, Ditto.	7	63		14	4		7	57				Ditto.
8	80			8	80			4		8	74½		86	14	Cloudy and light rain.	8	61		16	4		8	55				Ditto.
9	80		Sultry.	9	79	E		4		9	75½		72	13		9	61		9	5							Fever final ceased.
10	82			10	79		9	2	High wind night and day.	10	75	W	77	16		10	62		7	6							
11	80			11	78½		4	3		11	75½		73	23		11	63		5	1							
12	79			12	77		9	6		12	76		63	24		12	64		7	3							
13	80			13	77		5	3		13	73	E	115	21	Cloudy with high wind.	13	63		6	4							
14	80	W		14	77		8	2		14	74	E	103	23		14	60		3	1	Heavy rain.						
15	82		Sultry.	15	76		5	2		15	74		91	19		15	62	N W	2	2							
16	81			16	77		5	4		16	72	N W	98	24		16	62		5	1							
17	80			17	76½		9	12		17	69½		89	37		17	63		7	2							
18	80			18	78		7	6	Cloudy.	18	68		75	31	Showers during the night.	18	62		10	3							
19	80	E		19	77		6	7		19	69		98	23		19	62		7	1							
20	81	S W		20	76		33	12	Very hazy and close.	20	69½		75	20		20	60	E	3								
21	80	E		21	74	N W	19	14		21	68	E	71	23	Heavy rain night and morn.	21	60		5								
22	81			22	74		13	13		22	66½	S W	20	19	Ditto.	22	60		1	1							
23	82½			23	73		18	15		23	66½		46	19	Ditto.	23	60		2	2							
24	82			24	72		14	12	Cloudy and like rain.	24	66		45	19	Showery.	24	60		2	2							
25	80			25	72		57	16	Heavy showers of rain.	25	66½		27	22		25	61		2								
26	80	S W		26	70		70	23	Ditto.	26	66½		31	11	Heavy rain night and morn.	26	61		1								
27	80			27	69	E	50	26	Ditto.	27	66		43	17	Ditto.	27	61			2							
28	80			28	68		29	17	Ditto.	28	65½	N E	40	18		28	61	N W	1								
29	80	E		29	68		54	26	Heavy rain night and day.	29	65		26	11	Cloudy and like rain.	29	60		2								
30	80	S W		30	68	W	41	25	Ditto and fair.	30	65	E	15	5		30	60		2								
31	80	E								31	62½	N E	26	4													

This Table to face p. 341.

That the state of the weather had an evident and decided effect on the disease appears to be fully proved by the subjoined table, for the authenticity of which, as well as every other fact I have brought forward in this volume, I pledge myself to the reader, they having all been obtained from the most respectable sources. It will be seen by this table, that during the month of August, easterly winds and sultry weather, with the thermometer standing at 80 in the shade, prevailed. In the early part of September, the thermometer still continued the same, and the disease is noticed as having commenced on the 8th; it seems, however, to have made little progress till the 20th, when a very hazy close day augmented the number of attacks from six to thirty-three. From this time the numbers appear to have daily increased, especially during the hazy weather, which occurred in the beginning of October.

"On the night of the 25th of September," (says Mr. Whitmarsh) "a good deal of rain "fell at intervals, the clouds were very low, "and it was occasionally squally succeeded by "calms. The rain continued to fall in per- "pendicular torrents till the morning of the "29th. The thermometer on board at noon, "ranged from 68° to 72° of Fahrenheit. On "the 28th in the morning, I was landed on the "neutral ground; on the middle of the 29th, "an intensely hot sun succeeded the heavy

" showers, and continued with little intermission
" the succeeding days until the 19th of October,
" during which period a Levant (easterly) breeze
" chiefly prevailed, the days being intensely
" hot. Astonishingly thick fogs came on for
" several successive nights, commencing an hour
" or two before sunset, and continuing till
" nine, ten and even eleven o'clock in the
" morning, when the rays of the sun became
" oppressive, with little or no circulation of
" air, *even on the neutral ground;* the thermo-
" meter ranging from noon till three or four
" o'clock, from 78° to 86°, and falling at night
" six, seven, eight, ten, and twelve degrees."

The disease was at its acme on the 13th of October, on which day no less than one hundred and fifteen were taken ill. On the 21st, heavy rains began to fall with a decrease of temperature, and on the following day, the number of persons attacked was reduced from 71 on the 21st, to 20 on the 22d, and from this time through November till it finally ceased, there was an almost daily diminution. The following circumstance will also tend to shew the salutary influence the state of the weather had on the disease. Shortly after the heavy rains had fallen, a number of the inhabitants, who on the first alarm of fever had fled to the ships in the bay, were allowed to come on shore: yet not one of them was (I have been informed) attacked by the epidemic.

It was here my intention to have offered some further observations, suggested by a consideration of the foregoing communications, &c. but as I shall have an opportunity of doing so in my reply to Mr. Pym, I refer the reader to that part of the work.

APPENDIX No. V.

An Account of the Fever of Gibraltar, during the years 1813 *and* 1814, *by John Humphreys, Esq. Assistant Surgeon of the Royal Artillery.*

The bilious remittent fever, which has always been prevalent here during the summer months, assumed an aggravated form in the month of August, 1813; the first bad case I witnessed was in a Bombardier of the Royal Artillery on the 30th of that month. From this period the disease was general in the town, and persons of every class were attacked by it. Families became exceedingly alarmed, and went so far from the report and supposition of its being highly contagious, that they shut themselves up; secured the doors from persons entering, and would not on any account allow even their friends to approach them. The fever attacked persons in different parts of the town at the

same time, very remotely situated from each other; and those who shut themselves up, and who may be considered to have placed themselves in quarantine, perfectly insulated, were attacked as readily as those who mixed indiscriminately with the people; shewing clearly, that the disease was produced by local causes, acting generally on the whole population of the place. Many instances can be adduced in illustration of this fact, and that the fever never could be satisfactorily traced to any assignable source of contagion.

In 1813, the disease did not creep gradually from one part of the town to another, but shewed itself in different points at the same time, attacking persons who had never approached the sick. I shall give one or two striking examples, which came under my own immediate observation. A lady, an officer's wife, residing in the Moorish Castle, which is considerably above and out of the town, never left that place, and was so alarmed that she would not allow any individual to approach her; and after the fever had existed five weeks or more, she was attacked, and died. *Her husband, who was constantly at her bed-side during her illness, escaped the disease;* similar precautions had been taken by the ordnance storekeeper, R. Pringle, Esq. *who had adopted the most rigid*

quarantine for more than three weeks, yet he did not escape; as his was the first case wherein I ventured to deviate from the common mode of treating the disease, and as it terminated successfully, contrary to the opinions of the medical officers and others who knew him, I take the liberty of giving an outline of it. He was seized suddenly with the common symptoms, as cold shiverings; violent pain of the head, loins, and calves of the legs; great pain and redness of the eyes; dimness of sight; vomiting; hot dry skin; coated tongue; quick strong pulse. I took away immediately forty ounces of blood: after the loss of twenty ounces he expressed great relief, and begged me to continue it, which I did till the above quantity was abstracted. His head was instantly relieved; he could see distinctly; and his pulse was reduced from 125 to 90. I ordered him a strong purgative of calomel and jalap, and also directed cold water with vinegar to be applied to the forehead: four hours afterwards I visited him again, and found that his head was entirely relieved, but some pain of the loins and calves of the legs still remained; he had had some sleep; his skin was moist; bowels moved; and the pulse nearly natural. I directed him to take three grains of calomel every three or four hours, and on the fifth day he was perfectly re-

covered. *Mrs. P. who was constantly with him, escaped, as did the children.*

Seeing from the above case the good effect of bleeding, instead of bringing on extreme debility, and certain dissolution, as I was told it would, I was resolved to try blood-letting, and the depletory system, with the next patient I might be called to, which was an officer of the Royal Engineers; I found him labouring under the symptoms of the prevailing fever, complaining of extreme pain of the head, loins, and calves of his legs; pain and redness of the eyes; dimness of sight; hot skin; quick pulse; bilious vomitings. I opened a vein in the arm, and drew away thirty-six ounces of blood; his head was immediately relieved, as were the eyes, loins, and legs; and his pulse, which was 120 before bleeding, was reduced to 92. The same treatment was adopted as with Mr. Pringle, and in a few days he was recovered. Four officers of Engineers were ill with the fever in 1813, three of them I bled largely, and they recovered in a few days; the fourth, Captain C. I did not bleed, his attack was slight, and gradually ran into that insidious form which has too often deceived me; he was extremely ill for several days, and suffered the most severe gastric symptoms I ever witnessed; the vomiting was so distressing and frequent, that nothing for three

days would remain on the stomach; he had occasionally hiccough, which lasted some hours; extreme anxiety, and restlessness; dry coated tongue; great thirst; small quick pulse; delirium, and yellow suffusion all over the body. Had I taken blood from him at the commencement of the attack, although the symptoms were not violent, I have no doubt, from the effects preduced by it in similar cases, which I witnessed in 1814, that I should have saved him from all the agonies he suffered. Three of their servants, and several men in the ordnance department, were bled by me, and all of them recovered in three or four days. The master cooper was one of those whom I ventured to bleed some hours after the attack; he was taken suddenly ill with every symptom of the disease, and would not be convinced by his wife and friends, that he had the fever, till the head became so violently in pain, that he could not bear it moved, and his eyes looked red. I was then desired to visit him, and found him complaining of severe pain in the head, loins, and calves of the legs; eyes suffused; flushed countenance; hot skin; quick pulse; dry coated tongue; bilious vomitings. I bled him to forty ounces, and he declared immediately afterwards, that his head was entirely relieved, that he could see objects distinctly, and that he felt

considerably better; purgatives were given; cold vinegar and water were directed to be applied to the head, and on the fifth day he was well enough to attend his duty. His wife and attendants remained free from the disease. I could adduce many more instances of patients who were bled and recovered; *not one died, whom I had the sole charge of, that lost blood;* but I imagine these alone will be sufficiently illustrative, that bleeding has not the effect of causing that extreme debility, which it has been said to have in this disease. Instead of producing debility, or deleterious effects, it is the very measure that will prevent these happening.

The debility that we find in this disease, arises entirely from the increased vascular action, not being reduced. The heart labors exceedingly, and if the volume of blood is not lessened, it continues to beat, till absolute exhaustion ensues, or the destruction of some important viscus essential to life. The disease must then take its course; incessant vomiting comes on, terminating in the black vomit, delirium, suppression of urine, hiccough, small indistinct pulse, and the whole train of mortal symptoms. When from active measures having been neglected at its commencement, the disease is allowed to arrive at this advanced stage, wine, bark, opium, brandy, æther, and all other stimulants, we know to have but little effect.

Many have been saved without losing blood, but generally speaking, the attacks were slight; and rest, with a little medicine, and the great aid of nature (which alone will frequently accomplish cures) was sufficient to restore them again to health.

But the medical attendant is too often deceived in those called slight cases; at first the patient does not suffer much; he complains of but little pain of the head, loins, calves of the legs; the eyes are only slightly suffused, and in moving them not much pain is excited; the skin has not that burning feel, and is sometimes moist; the pulse not full, or much accelerated; tongue triflingly coated, vomiting not severe; if these symptoms do not increase, the case is indeed slight, and purgative medicines, cold affusions, confinement to bed, and the starving system, will frequently effect the cure: but in a few hours these symptoms commonly increase, and on the third day the stomach becomes irritable, the pain of the head and loins much increased, the patient complains of difficulty in making water, and when passed it is high coloured, and scanty: the countenance assumes a most expressive and anxious cast, and the patient becomes extremely restless and uneasy; the head, breast, and upper extremities slightly tinged, pulse about 120, tongue dry and coated, great thirst.

The fourth day the patient is delirious, frequent vomitings ensue, and the matter thrown up resembles the grounds of coffee; suppression of urine takes place, the whole body becomes suffused, and the pulse small and vibrating; the mouth is parched, with sordes adhering to the teeth, gums and lips, and in a few hours the scene of life is closed. This is the insidious form of this destructive disease, therefore we ought not to consider it a slight attack exactly, and place our dependance in purgatives, the cold affusion diaphoretics, &c. for a cure, which is *now and then* effected by them, where the symptoms do not exceed what I have mentioned; but if in five or six hours afterwards there is an increase of pain, the eyes more suffused, and the pulse more frequent; if instead of 90 it is 100, or exceeds that, blood-letting should immediately be had recourse to: by this measure we are acting on the safe side, as we find the head relieved, the dimness of sight removed, the heart, which was beating forcibly, and labouring, is reduced to nearly its natural action, and the patient after this falls asleep and generally perspires freely.

In witnessing this disease again in 1814, I was fully convinced of the utility of observing closely this insidious form of attack, and in bleeding instantly upon the increase of the symptoms

which in every case arrested the progress of the disease, and saved the patient. On the contrary, where the lancet has not been used, medicine and its auxiliaries have rarely had the same effect, and death has been too frequently the consequence. What has been said will not probably be sufficiently convincing to those who were, and are still averse to blood-letting in this disease, but I should hope, that when I am able to assert, *that every patient but one, labouring under this fever in* 1814, *who was bled by me, and under my own immediate charge recovered,* it will be acknowledged to have some weight in favour of bleeding; and the one who died, it is necessary to remark, had been suffering some time from visceral obstructions.

Until the arrival of Doctor M'Mullin, Physician to the forces, who reached this station in October, bleeding was held in the greatest dread, and if practised, was imagined to induce such debility as to occasion death; except in a few cases, where the temporal artery was opened, and four, six, or eight ounces of blood directed to be taken away.

Doctor M'Mullin was sent out to this station immediately after his return from West India service, where he has had ample opportunities of observing this disease and its treatment on a larger scale; *and the Doctor, after an examina-*

tion of the sick in the town and garrison of Gibraltar, and the appearances on dissection after death, pronounced the disease to be the yellow fever of the West Indies, and not contagious. He immediately ordered bleeding to be employed freely at its commencement, and almost every patient recovered with whom this remedy was used. The staff surgeons, and the greater number of the regimental medical officers in Gibraltar, entertain the same opinion respecting the nature of the disease. As it is the intention of the doctor to publish, very shortly his observations, &c. I have no doubt that the disease, and its treatment, will after his publication be better elucidated.

The disease, I believe, is now tolerably well understood not to be contagious. I think the two first cases I have mentioned, would suffice with many; but as there has been so much dispute, and such difference of opinion, not only with the medical men and civilians at this station, but also at home, respecting the fever being contagious or nón-contagious, I think too much satisfactory matter cannot be produced. The following quotation I take the liberty of adding from the observations of Mr. Amiel, Acting Surgeon to the Depôt for Foreign Recruits.

He says, " I do not attribute it to foreign in-
" troduction, as the rise and progress of our
" epidemics have never been traced in a satis-

" factory manner, from a single point of conta-
" gion to a gradual number of individuals, or
" families, and instead of creeping slowly from
" one district to another, cases have appeared
" unconnected and scattered at different points,
" and in some instances it has spread with the
" rapidity of the electric fluid, attacking persons
" who never had approached the sick, nor any
" assignable source of contagion.

" An individual, labouring under this disease,
" on being removed to a pure air, such as the
" neutral ground, or Europa point, did not com-
" municate the disease to those in the closest
" contact with him; this observation has been
" confirmed amongst the foreigners at the Eu-
" ropa barracks. The Depôt consisted of nearly
" six hundred men, sixty of whom were perma-
" nently employed in the different departments
" in town, or as servants to officers. These
" men on being attacked, and I believe not one
" escaped it, generally came to the barracks,
" where they lay all night in a crowded ward,
" and sometimes by concealing themselves, they
" continued two days in the same place; yet I
" never observed, that either their breath, or
" the effluvia of their bodies, had proved infec-
" tious to their companions. Forty women of
" that Depôt, who had been prohibited passing
" Europa Gate, remained perfectly healthy, al-

" though I had seen some of them sitting on the " same bed where a man was lying in a fever.

" Out of the four thousand Spaniards, re- " moved to the neutral ground in 1813, a few " died of the fever then prevailing in the garri- " son; but it is a well known fact, that those " only had the fever there, who were already " sick on going out, and that they did not " communicate the disease to any of their " friends, neighbours, or attendants. If this " disease cannot be transplanted from the town, " to so short a distance as the neutral ground, it " is not likely it could have been transplanted " from Cadiz to Gibraltar."—From the above quotation, I think sufficient proof is given, that the disease is not imported, or contagious.

Another striking proof of the fever not being contagious, is that several persons have left the garrison during the fever, and gone on board vessels in the bay, to their friends, who became extremely ill with it afterwards, and not one of their attendants caught it.

There are many other facts which might be adduced, in favor of its not being contagious, nor can I for a moment entertain the idea of its having been imported into this garrison. It is not likely, in my opinion, that contagion should shew itself in different years, precisely at the same season, having lain dormant and inert

nine months of the year, and then burst forth to commence its devastating influence. Do contagious diseases consult seasons to make their ravages?

I have to conclude by observing, that it is now pretty well established as a fact, that the fever is local, not imported, nor propagated by contagion—that all the regulations of quarantine, and other precautionary measures, have had but little effect in either preventing or lessening the ravages of the disease—that the fever is alone influenced by the season of the year, and gradually lessens in severity, as the cold weather, with wind, and heavy rain, succeeds to the autumnal heat—and that the only measure found decidedly efficacious, has been the removal of the people from the western side of the rock, that is to say from the range of action of the local causes.

As I have endeavoured to inculcate the necessity of evacuating blood in the early stage of this disease, and of the depletory, instead of the stimulating system, it may be deemed necessary to describe the appearances which I usually observed on dissection, after death.

The body externally of a dirty yellow colour, and very offensive; on removing the skull cap, the dura mater extremely vascular and turgid, as was the surface of the brain; on dividing the

substance of the cerebrum, the vessels were found much injected, and the divided surfaces soon became covered with blood; in some instances two or three ounces of serum has been found in the basis of the cranium.

On opening the abdomen, most of the viscera in that cavity were found inflamed, the vessels of the omentum, mesentery, large and small intestines, very turgid. The stomach contained a quantity of a dark or black slimy fluid adhering closely to the internal coat, which was red and inflamed. The kidneys generally of a livid cast, and when cut into, an unusual quantity of a purplish coloured fluid was observed. The urinary bladder sometimes contained two, three, and four ounces, and in other instances scarcely any water.

JOHN HUMPHREYS,
Assistant Surgeon,
Royal Artillery.

Gibraltar,
June 20, 1815.

APPENDIX No. VI.

H. M. Ship Barrosa, Portsmouth Harbour, Sept. 26th, 1815.

My Dear Dr. Burnett,

The perusal of your Book on the Fever, commonly called the Bilious Remittent, has induced me to trouble you with a few cases and observations, illustrative of the striking resemblance which exists between that fever, as it appears in the Mediterranean, and the fever of the West Indies, commonly called the yellow fever, which I hope may not prove unacceptable to you.

The Barrosa arrived at Barbadoes about the 27th of May, 1814, and during a few days whilst at anchor in Carlisle Bay, several cases of fever occurred. The first taken ill was Philip Newport, corporal of marines, who complained on the 28th May, of severe head-ach, slight pain in the chest; debility, particularly of the inferior extremities; languor, pulse 96, full and hard; bowels

rather costive; tongue dry in the middle, with a red and fretful edge; skin hot; countenance flushed; eyes slightly inflamed, and covered with a watery fluid; slight cold shivering; thinks his complaints originated from exposure to the sun whilst on shore yesterday with the watering party.

Statim: detrahantur sanguinis ℥xxiv.

℞ Ex: colocynth comp: gr: viij. calomel gr: x ft: pil: st: sumend: Aq: hordei pro potu ordinario.

3 P. M. Experienced great relief from the venæsection, and bore the loss of upwards of twenty ounces of blood; when he became faint; no operation from the cathartic; slight head-ach; nausea, and loss of appetite; pulse 84, full; tongue dry; three fits of cold shiverings; complains of a tremulous sensation over his whole body. Seven o'clock, Vespere. Head-ach more severe, with slight pain in the chest, and difficult respiration; suffusion of eyes greater; retching and lassitude; pulse 86, hard and full; St: mittatur sanguis e brachio ad ℥xvi. no operation from the cathartic; tongue dry; skin hot. ℞ Solut: sulphat: magnes: ℥iv. sumend: hora septima.

29th. Passed a sleepless night, and complains greatly of head-ach and pain throughout the region of the chest; five or six copious evacuations from the cathartic; pulse 96, full. Tongue

moist; skin hot; general debility and cold shivering; but no distinct exacerbation to be discovered. Repet: venæsectio ed ℥xij ℞ P: antimon. gr: ij. calomel gr: iij. ft: pil: ter quaterve in die sumend: Evening visit; great relief from bleeding; head-ach gone; respiration free and easy; three stools during the day; watery suffusion of the eyes still apparent; considerable debility; slight nausea. Contin: pil:

30th. Passed a good night; slight head-ach; pain of chest trifling; respiration free; pulse 90, soft; tongue clean; bowels open; skin cool and moist. Contin: pil: Evening; no complaint, continues convalescent. Repet: ut antea.

31st. No complaint except debility, particularly of the inferior extremities; slept well; suffusion of the eyes very slight, and of a yellowish tinge; heaviness over the eye-brows; no shiverings. Contin: pil: Evening visit; continues to mend; slight head-ach; appetite better; nausea; three copious evacuations since last report. Omitt: pil: Barley water for common drink.

June 1st. Slept well during the night; complains of general debility; appetite improving; yellowish tinge of the eyes more apparent; no return of head-ach or pain; respiration free; pulse 76, soft; tongue clean; bowels open;

skin cool. Repet: aq: hordei pro potu ordinario.

2d. Passed a good night; slight head-ach, and pain of the inferior extremities; pulse natural, and bowels open. ℞ Infus: quass: ℥viij. capiat coch: iij. tertia quaque hora. From this date nothing of importance in the history of this case occurred, the infusion of quassia was continued, and on the 8th of June he was capable of returning to his duty.

Robert Aird, seaman, was attacked on the morning of the 28th of May, with violent head-ach; pain in the epigastric region; vomiting; loss of appetite; considerable debility and soreness of the inferior extremities; slight cold shivering; countenance flushed; eyes watery, and inflamed; has not been much exposed to the sun; knows of no cause for his illness; pulse 96, full and easy; tongue moist and tremulous; skin hot; bowels open. Statim mittatur sanguis ad ℥xxiv. ℞ Extr: colocynth. C. gr. vi. calomel: gr: viij. M. ft: pil: st: sum: Barley water for common drink. 3 o'clock, P. M. great relief from the loss of eighteen ounces of blood, when he fainted; one scanty stool from the cathartic; head-ach still severe; pain in the epigastric region as in the morning; vomiting, though he thinks he retained his pills; debi-

lity, with tremor affecting the whole body; thirst urgent; pulse 90, full and soft; tongue moist; ℞ Solut: sulphat: magnes: ℥iv. st: sumend: Evening visit, pain of head more severe; respiration affected, and complains of an uneasy sensation throughout the epigastrium; three copious stools; vomiting abated; tremor considerable; debility and languor; pulse 98, full and vibrating; tongue moist and clean; great heat of surface, with cold shiverings at short intervals. Detrahantur sanguinis ℥xxvi. st: ℞ Sol: sulphat: magnes: ℥viij. capiat coch: iij ter quaterve in die.

29th Passed a comfortable night; great relief from the bleeding; but at about 12 o'clock suffered a recurrence of head-ach; pain in the chest; slight shivering; these symptoms, however, soon abated, and he slept soundly during the morning; three copious alvine evacuations, very fetid; complains of great debility, with giddiness and tinnitus aurium; pulse 94, soft and feeble; tongue moist; skin very hot; countenance improved; eyes watery and inflamed. Omitt: sol: sulphat: magnes: ℞ P: antimon: gr: ij. calomel: gr: iij. ft: pil: tertia quaque hora sumend: Evening visit; no amendment; head-ach rather severe; slight nausea; tongue dry and furred; pulse 94, soft, bowels open; thirst urgent. Contin: pil: necnon: applic: emplast:

lytt: toti capiti: Perfundatur corpus aqua frigida statim: Contin: aq: hordei pro potu ordinario.

30th. Passed a restless night, and this morning complains of giddiness, languor, and inability to move himself in bed; respiration free and easy; loss of appetite; great thirst; no benefit from the cold affusion; epispastic took full effect; slight shivering during the night; pulse 86, soft; tongue moist and clean; skin hot. Repet: pil: et affus: frigid: Evening much better; slight giddiness and tinnitus aurium; slept soundly during the afternoon; thirst more moderate and heat of surface diminished. Perstet æger: ut antea.

31st. Passed a good night, having slept well the greater part of the first and middle watches; slight vertigo; appetite mending; pulse 84, soft; skin cool; tongue moist and clean. Contin: Pil: Evening; continues convalescent; strength and appetite improving; skin cool; pulse regular; bowels open. Perstet æger ut antea.

July 1st. No complaint except considerable debility. Prætermitt: pil:

2d. Continues to improve in appearance.

3d. Slept well; no complaint; is recovering strength and flesh daily. ℞ Infus: quass: ℥viij. capiat coch: iij. tertia quaque hora.

4th. No complaint. From this date he daily acquired strength, and on the 9th inst. was discharged to duty.

Several other cases at this time also occurred, but which, owing, as well to the similarity of their symptoms and treatment, as to their like happy termination, I do not conceive it necessary to detail to you; suffice it to say, that not one out of the number remained on the sick list longer than ten or twelve days, nor did ever any of them even suffer the slightest relapse. Having sailed from Barbadoes, the crew of the Barrosa continued remarkably healthy, the number on the sick report seldom exceeding four or five, and during many subsequent months (except in a few slight cases) fever did not present itself; indeed whenever the disease in question has appeared, the principles on which I have conducted its treatment, have never failed to produce the happiest effects; the urgent symptoms being subdued generally about the third or fourth day; I have then found it requisite only to guard against the consequences of repletion; and as I have generally witnessed patients anxious to gratify the cravings of their

returning appetite, so I have found it the more necessary to be careful, that my directions in this respect were punctually attended to; a full meal, or even indulging immoderately in any kind of food, will, at this time, almost inevitably occasion a relapse. A few days since a case came under my own observation, the relation of which cannot fail to place in a strong point of view, the dangerous consequences arising from the indulgence I have just stated.

H. M. Ship Barrosa, Fort Royal, Martinique.

June 21st. Francis Smith, marine, aged 24, of a full and plethoric habit, was attacked this afternoon with cold shivering; violent head-ach; great heat of surface, though he experienced repeated chills, with shivering of the inferior extremities; heaviness of the eye-balls, as if, he says, the eyes were too large; neck stiff and uneasy; soreness of the limbs; can assign no cause for his complaint; tongue dry, and mouth parched; pulse 98, hard and oppressed; bowels costive. Statim: detrahantur sanguinis ℥xxx. ℞ Calomel: gr: x. extract: colocynth: comp: gr.

viij. M: ft: bol: st: sumend: Aq: hordei pro potu ordinario.

Hora sexta P. M. Experienced great relief from the bleeding, and bore the loss of more than thirty ounces; no operation from the cathartic, and head-ach still very severe; countenance flushed, and suffusion of eyes, which bear marks of inflammation; complains of soreness in the lumbar region, extending across the abdomen; frequent chills, succeeded by a burning heat, and redness of the neck; general tremor and inability to stand erect without support; pulse 98, full, hard and vibrating; heat of surface somewhat diminished; great thirst. St: Repetatur venæsectio ad ℥xxx. et capiat solutionis sulphatis magnesiæ ℥iv. Hora septima. Contin: aq: hordei: Hora nona. P. M. Great relief from the abstraction of thirty ounces of blood; head-ach slight; intellects confused; debility considerable, although, he says, he is stronger than he was an hour after the attack; slight retching; four large and fetid stools since six o'clock; thirst less urgent; heat of surface very pungent, and skin smooth and glassy to the feel; countenance flushed and red; eyes appear more tranquil, though they seem as if swimming in a watery fluid; temporal arteries pulsating violently; is restless and impatient; pulse 90, full and wiry. Mittatur sanguis et arteria tem-

porali ad ʒxx. statim: ℞ P: antimon: gr: ij. calomel gr: iij. M: ft: pil: tertia quaque hora sumenda; porro perfundatur corpus aqua frigida. Contin: aq: hordei.

22d Passed a restless night, having slept very little; complains of severe head-ach this morning; only about twelve ounces of blood could be obtained last night from the temporal artery; three or four copious and fœtid dejections during the night; complains of debility and general soreness of body; countenance less flushed; eyes suffused and inflamed, and of a yellowish cast; pulse 94, full and soft; tongue moist; bowels open; heat of surface considerably reduced since the cold affusion. Statim detrahantur sanguinis ʒxij. e brachio dextro. Contin: pil: hora undecima A: M: Considerable relief from the bleeding, which owing to the state of the pulse, and gradual diminution of the head-ach, was carried to the extent of eighteen ounces; two alvine evacuations since last report. Omitt: pil: Contin: aq: hordei. Evening visit; has continued remarkably easy throughout the day, having no head-ach or pain; otherwise complains of being very weak and languid; pulse 88, soft; countenance mild; eyes less suffused, though tinged with a deeper yellow; tongue clean and moist; skin cool, and covered with a gentle diaphoresis; bowels open;

appetite somewhat improved; his request to be allowed a small quantity of arrow root was complied with.

June 23d. Passed a good night, having enjoyed several hours of sound and refreshing sleep; no return of head-ach, and says he feels very comfortable; pulse 86, soft; tongue moist; skin cool. Contin: aq: hordei. Evening; slight flying pains in the head, and twitchings of the inferior extremities; countenance improved, and eyes more natural; pulse 84, soft and mild; tongue moist; surface cool; bowels open.

24th. Hora sexta A: M: Great pain of forehead; attendants report that he has been delirious since about two o'clock this morning, and making attempts to get out of bed; appears anxious to keep or ward off somebody; will not reply to any question, or rather appears insensible; and when roused, touches his forehead, and perseveres in his endeavour to get out of bed; pulse 90, small and tremulous; countenance sunk; eyes wild and staring, stedfastly fixed, as if on some object; often shudders or shrinks within himself, apparently in dread lest he sustain an injury. (On enquiry I could not, at first, discover any sufficient cause for this sudden and very threatening relapse; at length it came out that one of his messmates had brought him a quantity of potatoes and beef, which,

notwithstanding my positive injunctions to the contrary, he could not resist eating.) But to return to my patient: he is constantly moving his hands and superior extremities, and altogether presents a sad and awful change since last night at ten o'clock, when I left him free from fever, and, to use his own expression, "very comfortable and easy." Statim detrahantur sanguinis ℥x. necnon abradantur capilli et applicetur emplastrum cantharidis toti capiti. Hora decima A: M: Mild delirium since last report; is insensible, and when spoken to, stares vacantly; pulse 96, soft and fluttering; tongue clean; and bowels open. Statim applicetur emplastrum epispasticum nuchæ contin: aq: hordei. Hora prima P: M: Appears more collected, though he has been raving during the greater part of the morning; says he suffers great pain in his forehead; skin hot; two stools since morning; pulse 88, soft; thirst urgent. Vespere, hora octava; appears almost perfectly collected; head-ach easier; epispastic has risen well, and produced a free discharge from all parts of the head; pulse 78, soft and mild; skin cool. Injiciatur statim enema emoll: Contin: aq: hordei. Hora indecima, vespere; has been asleep since nine o'clock, respires free and easy, and appears to sleep undisturbed. Contin: omnia ut antea.

25th. Has slept during the greater part of the night, free from delirium; no head-ach; skin cool and moist; enema produced three large stools, highly fetid; countenance greatly improved since yesterday; eyes dim and suffused, and of a deep yellow colour; pulse 94, soft; tongue clean; bowels open. ℞ Ol: ricini ʒvi. aq: menthæ: piper: ℥iss. M: ft: haust: st: sumend: Contin: aq: hord: pro potu ord: Hora prima P: M: complains of general weakness; appears perfectly composed and sensible; slight head-ach; nausea; tinnitus aurium; pulse 94, soft; skin moist and cool; three copious alvine evacuations. Contin: aq: hordei. Hora septima, vespere. Passed the afternoon without pain; feels languid and reduced; pulse 88, soft. Contin:

26th. Slept comfortably; no head-ach; countenance much improved; pulse 86, soft; skin moist and cool; tongue clean; bowels open; to be allowed a small quantity of arrow root for breakfast. Hora prima P: M: no complaint, except extreme debility; countenance improving; pulse 84, soft; tongue moist; skin cool; bowels open; appetite better; let him have some arrow root for dinner. Evening, no complaint; feels a little stronger. Contin: aq: hordei.

27th. Slept well during the greater part of the night; no complaint this morning; pulse

80, soft; tongue clean; skin cool and moist; bowels open; to have a little sago for breakfast, and a small bit of the crumb of bread soaked in warm water. Evening, no complaint; countenance improving; thinks himself considerably stronger. Contin:

28th. No complaint; slept comfortably; skin cool; bowels open. Evening, appetite mending. Contin:

29th. Strength improving, and no complaint; feels himself considerably stronger in his intellects, and wonders at his former condition; pulse 78, soft; skin cool; bowels open; to be allowed some chicken broth for dinner. Evening; continues free from complaint, and general appearance much amended. Contin: aq: hordei.

30th. No complaint. Contin: From this date he gradually recovered his strength, and is at present (July 13th) almost competent to return to his duty. On the 4th of July he began taking the infusion of quassia, and will, I doubt not, in another week be perfectly restored.

Can the threatening and sudden change which took place in this case, he attributed solely to what the patient ate? The system in general, and the circulation in particular, having been so

speedily reduced, is it not probable that a quantity of food taken into the stomach under these circumstances, proved so great a stimulus, as to produce the dangerous relapse I witnessed in my patient? The brain immediately sympathizing with the loaded stomach, the sensorium became deranged, and the circulation much increased; I have seldom seen so narrow an escape.

The Medina, 20 guns, arrived at Barbadoes in January, and many of the crew were attacked with fever: the most prompt and judicious treatment, however, was put in force, and the whole very soon recovered; indeed I have not heard of a single death from fever, either at the Naval Hospitals, or in any of the Ships of War, during fourteen months I have been on this station; and I can assure you that early and large evacuations, if not universally adopted on shore, at least amongst my Brethren of the Navy, are considered as the only effectual means of combating the fever of this country: how successful this practice proved in a recent instance, the following Cases and Observations, with which I have been favoured by Mr. Forbes, Surgeon of the Venerable, will enable you to judge.

H. M. Ship Barrosa, Fort Royal, Martinique, 17th June, 1815.

Copy of a Note received this morning from Mr. Forbes, Surgeon of H. M. Ship Venerable.

" Thinking that you might be glad to see " such a convincing commentary (as far as it " goes) on the practice and principles laid down " and inculcated in Dr. Burnett's book, I have " sent you an account of the fever which pre- " vailed some time ago in the Raven, and " which has been so kindly and so well detail- " ed to me by my late assistant Comrie; I " can get it from you when we next meet."

J. F.

H. M. Ship, Niobe, Gros Islet Bay, St. Lucia, June 5th, 1815.

" Dear Sir,

" Nothing can give me greater pleasure than " to endeavour, as much as I am able, to com- " ply with your request; but I am afraid I " shall contribute very little to elucidate, in any " degree, the subject: nevertheless, your even " wishing me to try it, is to me a sufficient in-

" ducement; and I am very proud, in being fa-
" voured with your correspondence; the only
" method I can think of, is, first to give two
" or three cases in detail; and secondly, to en-
" deavour to give a general history of the whole,
" with the addition of some remarks."

" *H. M. Sloop, Raven, Carlisle Bay,*
" *8th April,* 1815.

John Handcock, Marine, ætatis 39, athletic and plethoric, has been indisposed for a day or two before I joined the Raven; this morning complains of violent head-ach and vertigo, the pain particularly referred to the forehead, eyeballs, and temples; alternate chills and heats; an uneasy sensation of stiffness about the nape of the neck, and pains in the back, loins, superior and inferior extremities, resembling acute rheumatism; the pains in the loins vibrating on each side, as far as the linea Ala; as also pain in the thorax, increased on respiration, and anxiety about the hypocondria, accompanied with much thirst, heat of surface, nausea, and other symptoms of pyrexia; pulse 110, full and strong, tongue dry, face

flushed, bowels very constipated. Detrahantur sanguinis mane e brachio ℥xxxij. et post horam habeat calomelanos gr: xij pulveris jalapæ ʒß pro dosi. After venæsection, the pain in the thorax was somewhat alleviated, and his bowels were evacuated: in the evening the symptoms began to be as severe as in the morning, with much heat of surface. Venæsectio iteretur ad ℥xxxij. By which the symptoms were greatly alleviated; but the heat of surface still continuing, after venæsection, the cold affusion was had recourse to, and apparently with advantage.

April 9th. Constant anxiety during the night, with a very distressing pain in the lumber region, and pains in the extremities and thorax; increased on respiration, and in the abdomen, upon the least pressure, or respiration, and even a slight pain without pressure; pulse 120 and hard, face flushed, mouth dry and parched, bowels very constipated. Venæsectio mane ad ℥xxx et duas post horas habeat sulphatis magnesiæ ʒß. Calomelanos, gr: xij pro dosi; by which his bowels were slightly evacuated: in the evening the pain in the thorax was considerably alleviated; but the pain in the abdomen still increased upon respiration and pressure; pulse 110; and full. Venæsectio vespere ad ℥xxvi et hora somni parti affectæ imponatur emplastrum lyttæ.

April 10th. Slept ill, blister rose well, pain in the abdomen considerably alleviated; but the head-ach and vertigo still continue. Pulse 90 and soft, skin cool, bowels costive. Habeat mane sulphatis magnesiæ ʒß in aqua Bullienti solut:

April 11th. Slept pretty well last night, no complaint except debility, and a slight head-ach, bowels rather costive. Habeat bis in die infus: quass: et sol: sulphat: magnes: satis ad alvum lentè movendam.

April 17th. To duty.

CASE II.

May 12th, off St. Lucia.

John Field, mariner, ætatis 21, was harassed for about an hour or more with cold shiverings, which were succeeded by a sensation of heat, and afterwards frequent alternate chills and heats, attended with head-ach and vertigo, and other symptoms as mentioned in Handcock's case, and pain in the abdomen increased upon respiration and pressure, the pain particularly referred to the stomach. Pulse 120 and small, tongue red

and dry, mouth parched, eyes suffused, and enlargement and redness of the vessels of the tunica conjunctiva. Venæsectio mane ad ℥xl. et postea habeat calomelanos gr: xij. After venæsection, p. 84, full, strong and vibrating; the V.S caused syncope, and immediately after it, he had a copious alvine evacuation. In the evening, symptoms as before, pulse 88; full strong and vibrating. Venæsectio iterum ad ℥xxx. and his bowels were again evacuated immediately after the venæsection: syncope was again produced, and the abdomen became easier.

May 13th. Head-ach rather easier; had some sleep last night; the pain in the abdomen as severe as before. P. 84, full strong and bounding; had several evacuations last night. Venæsectio mane ad ℥xxx. by which the head-ach and pain in the abdomen were considerably alleviated, and he had a free evacuation. Habeat calomelanos gr: vi. sulphatis magnesiæ ℥ß pro dosi. In the evening a good deal easier; pulse 88, and strong; skin pretty cool and moist; nihil nocte.

May 14th. Slept ill, complains still of the pain in the abdomen, increased on respiration, pulse 78, and full. Cœtera ut antea. Venæsectio mane ad ℥xxx. which greatly alleviated the pain in the abdomen.

May 15th. Slept pretty well last night; pain

in the abdomen gone, and he complains of nothing but a little head-ach and debility. Habeat sulphat: magnesiæ: ℥iss: in aquæ bullientis ℥iv: solut: cujus: capiat: ℥i: omni tertia hora donec alvus penitus exoneraretur. In the evening sent to Barbadoes hospital. I saw him in the hospital next day, quite free from fever.

CASE III.

April 16th, off Surinam.

My own case. Was harassed about 5 P. M. with alternate chills and heats, attended with vertigo and head-ach, particularly in the eyeballs, forehead, and temples, and a disagreeable stiffness about the nape of the neck, with pains occasionally in the superior extremities, resembling acute rheumatism, and some anxiety about the hypochondriac regions. Pulse 80, and full; tongue of a brownish colour; much thirst and heat of surface; bowels very constipated. Vespere calomelanos: gr: xviij: P: jalap: ℈ij pro dosi: sumpsi.

April 17th. Slept ill on account of the head-ach, vertigo, and other symptoms being much

aggravated; pulse 100, and somewhat hard; cætera ut antea. Detractæ sunt mane sanguinis ʒxxxij et post horam cepi calomelanos gr: xv. P. jalapæ: ʒſs pro dosi. After the venæsection, which I performed myself, there being no surgeon present, I found remarkable relief, the head-ach and anxiety were considerably alleviated, and I had two loose bilious alvine evacuations.

April 18th. Slept ill on account of the head-ach and other symptoms, though not so severe as before. Pulse 100, and full; venæsectio mane iterum ad ʒxxx. which gave great relief; et cepi pulveris jalapæ ʒſs calomelanos gr: xij: which produced one loose bilious stool.

April 19th. Slept pretty well last night, until towards morning, when I was harassed with pains in my extremities, back and loins: since morning I have been troubled with anxiety about the hypochondriac regions. Pulse 100, and soft; very little head-ach, but the vertigo continues at times, (particularly in the erect posture,) sumpsi sulphatis magnesiæ ʒi.

April 20th. Quite free from fever; but I was troubled with vertigo for a week afterwards, and my bowels were very much disordered.

The number of men cured on board of fever, is 14; from the 8th of April to the 9th of May. The number I sent to the hospital in a convalescent state, and free from fever is 13, which were all sent on the 15th of May, and those sent on the first attack, from the 11th to the 27th May are 22; and therefore the total number sent, when I was in the Raven, to the hospital with fever is 35; and the number taken ill is 49, out of a complement of less than 90 men, and I understand that there has been a considerable number more taken ill, and sent to the Hospital.

A General History of the Fever as I saw it.

" The first attack sometimes exactly resem-
" bled the paroxysm of an intermittent, except-
" ing the absence of the sweating stage: *i. e.*
" cold shivering, which sometimes continued for
" an hour or two, and was then succeeded by
" preternatural heat; sometimes even continuing
" after the skin felt to the touch preternaturally
" warm; sometimes only chills and sense of heats,
" alternately, whilst the body was preternaturally

" warm, always accompanied with violent head-
" ach and vertigo ; the pain particularly referred
" to the eye-balls, forehead, and temples, and in
" general in these cases, the temporal and ca-
" rotid arteries throbbing preternaturally ; with
" a disagreeable stiffness about the nape of the
" neck, and pains in the back, loins, superior
" and inferior extremities, resembling acute
" rheumatism ; the pains in the loins vibrating
" towards the linea alba.

" It was also in general attended with anxiety
" about the præcordia, and pain in the thorax,
" which was increased upon respiration ; and in
" the most of them there was a constant pain in
" the abdomen, increased upon respiration, or
" the least pressure, and the pain generally re-
" ferred to the region of the stomach, with
" nausea, vomiting, and sometimes a purging of
" a bilious nature, but that was very rare ; the
" bowels being in general obstinately costive.
" Pulse before venæsection sometimes very
" quick, but weak ; tongue in the worst cases
" white, or red and dry. Mouth parched, face
" very much flushed, eyes much suffused, and
" the vessels of the tunica conjunctiva enlarged
" to such a degree as to resemble ophthalmia.
" After venæsection the pulse sometimes became
" full, strong, and vibrating, and I never saw
" it above 120 ; in general 102 or 110 ; and

" the patient complained as if his body had
" been bruised or beaten.

" The treatment I used, was to bleed till the
" symptoms, such as head-ach, pain and anxiety
" about the thorax and abdomen were remov-
" ed, which in general required, in the course
" of two or three days, about 150 ounces, and
" upwards, using at the same time the cold
" affusion, and always giving strong purga-
" tives, and applying blisters (when the re-
" action was removed by bleeding) to the
" thorax and abdomen, if the pain remained:
" In some cases the patient only complained of
" head-ach and vertigo, and some anxiety about
" the hypochondria, with heat of skin, thirst, and
" other symptoms; these slight cases were in ge-
" neral removed on bleeding, and by purgatives
" to keep the bowels open, which were always
" had recourse to. When the patient applied im-
" mediately upon the first attack, and the usual
" remedies were employed, the crisis was on the
" 3d day; but when that was neglected, it was
" sometimes protracted to the 7th, or perhaps
" 14th day, or sometimes longer, as happened in
" one or two cases under my care: In short the
" practice I found successful was Sangrado's.
" The Raven was well ventilated, and kept
" pretty clean, when I belonged to her, and
" there was very little irregularity that I saw.
" Most of her crew never were in warm cli-

" mates before, being employed chiefly on cold " stations ; they were in general very plethoric " and athletic young men, and these were most " subject to the endemic

" I attribute the spreading of the disease to " sympathy and fear, and not to contagion ; for " I think very few contagious diseases are of " such an inflammatory nature, and can bear " so much blood-letting; but I think it is most " prudent for me to drop the subject concern- " ing contagion and sympathy, for I confess I " know very little of either of them.

" We arrived at Paramaribo, Surinam, about " the 17th of April, and were at anchor off " the town till about the 23d, when we sailed " for Demerary ; were at anchor off the town " there from the 24th of April till the begin- " ning of May; afterwards sailed to Trinidad, " and remained there about two days ; during " our stay at Surinam, the weather was sul- " try, with continual torrents of rain, (if I may " be allowed the expression) and the atmos- " phere was constantly surcharged with elec- " tric matter, *i. e.* the sky was dark and hazy, " with a good deal of lightning and thunder " occasionally. During our stay at Demarary, " the weather was pretty fair, but occasionally " there were very heavy showers of rain. At " both colonies we were supplied with fresh

" beef, but with very few vegetables, and the " beef was remarkably fine at Demerary; " during our stay at Surinam we could pro- " cure no fruit, but at Demerary we had plenty. " While we were at Surinam, four or five men " were attacked with fever, and they all reco- " vered ; all the time I was in the vessel none " died. After leaving Demerary, and on our " passage to Barbadoes, there were a great " number attacked with the endemic of this " country, viz. on the 10th May two. On the " 11th, seven. On the 12th two. On the 13th " two. On the 14th one. On the 15th, the " day of our arrival at Barbadoes, seven. On " the 16th eight. On the 19th two. On the " 20th two. On the 22d one. On the 24th " one. On the 25th two. On the 27th one; " all of whom were sent to Barbadoes hospital " as I have already mentioned. I regret very " much that I had no thermometer, to mark " down daily the temperature, and make remarks " on the weather; but I do not think that I " should have been able to have done it, as I was " indisposed myself, and had a great many sick, " whom I constantly attended, though I was " scarcely able to keep up my head, on account " of vertigo and head-ach.

" These remarks I have sent to you in a " hurry, for fear we should part before I can

" send them, and I hope you will excuse any " error in them, and moreover I will esteem it a " particular favour if you will give me your ob- " servations thereon."

" I remain, &c. &c.

" Mr Forbes." " Peter Comrie."

Mr. Forbes transmitted these cases and observations to Dr. Jackson, inspector of Army Hospitals, whose unwearied zeal in the profession is so universally, and so well known ; and whose experience of the diseases of this climate, after a residence and practice of more than thirty years, must be extensive : the following were the Doctor's observations, to which I am confident too much weight cannot be attached : " That " he had no doubt, but for the very judicious " and decisive treatment adopted by Mr. Com- " rie, the fever would have terminated with the " usual fatal symptoms of yellow suffusion, hæ- " morrhage, and black vomit."

Every observation, then, that I have been enabled to make, as well as every fact that has come to my knowledge, connected with the disease in question, tend to prove the striking resemblance that exists between the bilious remittent fever of the Mediterranean, and the fever of this coun-

try, commonly called the yellow fever ; and from every circumstance I have witnessed, as well in the Mediterranean, as in the West Indies, I cannot but conclude that in both countries the fever is the same ; that it is characterized by the same symptoms; that when it is properly treated, the same happy termination uniformly attends it, and that the " Modus Operandi" of the remedies employed is exactly the same. I cannot, therefore better conclude, than with the following excellent observations from your work, that at the commencement of this fever, (whether in the West Indies or in the Mediterranean,) " it is a " disease simple in its nature, and easily to be " managed ; but if allowed to run on to disor- " ganization uncontrolled, or if, by improper " treatment, the inflammation and congestions " be increased, it soon arrives at that stage, when " the utmost power of medicine will be exerted " too often in vain."

Dr. Burnett. JOHN DUKE,
Surgeon, H.MS. Barrosa.

APPENDIX No. VII.

REPLY to Mr. PYM.

MAGNA EST VERITAS ET PRÆVALEBIT.

In a book lately published by this gentleman he has endeavoured to prove, that the disease I have described under the general name of "Mediterranean Fever," and that which he has been pleased to denominate the "Bulam," are entirely of a different nature. It was to be expected, that a person who had derived *emolument, credit, and promotion,* from the propagation of such doctrine, would endeavour to defend it, and had he confined himself to a fair and candid discussion of the subject, there could have been nothing to complain of; and I, as well as others, would have thanked him for any *real* light he might have thrown on the history or treatment of the disease; however, he has chosen to adopt a very different line of conduct, not only by making use of indecorous language

towards me, (which certainly will never add weight to his arguments, though it may gratify his resentment); but by wilfully misrepresenting facts, and shamefully garbling extracts from my work, he has forced upon me the unpleasant task of detecting and exposing his statements, which perhaps, will not be very agreeable to himself.

In the following pages then, I purpose to reply to Mr. Pym, but I do not intend to imitate him; for though he has forgotten, that "declamation is not argument," or "scurrility facts," the cause I am advocating by no means requires that I should descend to such a defence.

The first paragraph deserving notice is the following: "He has been most illiberal in his "attack upon the medical officers of Gibraltar, "accusing them *indirectly*, not only of mal-"practice, but of occasioning unnecessary "alarm; of causing patients, who might other-"wise have recovered, to be deserted by their "nearest relatives; of destroying commerce, "and of occasioning a great deal of distress to "individuals." The paragraph alluded to will be found by turning to page 263, and certainly never was intended to convey the imputation it *would suit* this gentleman to fix upon it. The first part of it states, a simple historical fact, which Mr. Pym, at page 46 of his book, fully

confirms, and only bears a reference to Gibraltar and the Spanish Cities in 1804; but if any thing had been wanting to prove the truth of the observation, it would be found at page 154 of Sir James Fellowes' Reports, already quoted,* part of which I shall beg leave again to insert here. "From the surviving medical men "(says this gentleman) I could collect nothing "consolatory, nor could any of them hold out "a *prospect* of success from the use of any par- "ticular medicine, as efficacious in this disease." When it is recollected that out of a population (including the garrison) of about 10,000, considerably more than half that number died; when we have this acknowledgment from the physician of the garrison, surely it is not too much to say that the practice was not successful! It is not my intention here to enter into any review of the practice of individuals, but I shall hereafter have occasion to notice that which Mr. Pym pursued in 1804, which was certainly very different from that which he now recommends.

The second part of the paragraph before alluded to, merely contrasts the effects of two different opinions, influencing the minds and actions of men during the prevalence of, what is

* See page 263.

supposed to be, a contagious disease, or otherwise; and as a proof that the belief of contagion in this fever did actually produce in Spain the melancholy scenes I have glanced at, I refer to the following passage, taken from page 493 of Dr. Bancroft's Essay on the Yellow Fever: "And it is notorious that during the "late epidemics in the south of Spain, an un- "fortunate exercise of civil authority, occa- "sioned the loss of many thousands of lives, "by compelling the inhabitants of the towns "where it prevailed to remain in their morbific "atmosphere, lest by quitting it they should in- "fect others."

"These, however, are but a part of the evils "resulting from a dread of contagion, where it "has no existence. Few in this country have "heard, or can conceive, how often, and to "what an extent, the strongest and best ties, "which unite and benefit mankind, have been "cruelly broken within the last twenty years "in some parts of America and Spain, by "persons acting under the terror of imagi- "nary dangers, and driven by it to abandon "their houses, their occupations, and even "their nearest relatives and dearest friends "in the hour of sickness; and by this deser- "tion of the duties of humanity, this denial of "that assistance, and those consolations which "might have been afforded without the small-

" est danger, to render those visitations of " disease incalculably more afflicting and fatal " than they otherwise would have been." " Don R. Armesto, in the work heretofore " mentioned, asserts, that the barbarous and " anti-social belief of the importation and conta- " gion of yellow fever, has, from its baneful influ- " ence in Spain, caused many unfortunate vic- " tims to be abandoned, and left to starve in " their beds. That others have been *shot at* " *the very doors of houses* in which they en- " deavoured to find an *asylum;* and that " many others *were carried alive to their* " *graves.*" " Let the zealots who have con- " tributed to this monstrous inhumanity (says " Dr. Bancroft) reflect upon it, and if their " intentions have, as I hope, been good, let " them at least maturely examine and re-consi- " der the foundations of their belief, before " they again endeavour to carry it into action."

With respect to the destruction of commerce for the time, the British merchants in Gibraltar can testify how much they were obliged to Mr. Pym in 1810.

At page 236 he denies the assertion I have made, that the medical officers of Gibraltar consider the fever of Carthagena, and that which has committed such devastations among themselves, as one and the same disease; and as a proof of this, he brings forward his instructions

to Mr. Vance, and the extract of his letter, which was sent by the *Governor* to Vice-Admiral Sir Rich. Keates, commanding his Majesty's Squadron at Cadiz.

In regard to the first, in 1810, Mr. Pym derived the disease from Carthagena, while Dr. Riseuno at Carthagena said it was imported into that city from Gibraltar. In February, 1813, the Governor published in the Gibraltar Chronicle, an extract of a letter from the Junta of Health in Carthagena, stating, that "the "disease had been characterized by its usual "symptoms, and two-thirds of those taken ill "died."

It was this year that I had an opportunity of visiting Carthagena, and there traced the progress of it so distinctly in the 67th regiment, as to leave no doubt of its local origin, and I confidently appeal to Colonel Prevost, and the medical officers of the 67th regiment, whether the fever which existed in that corps, while at the before-mentioned place, during the autumn of 1812, was not considered to be the contagious yellow fever of the place by the native practitioners. Whatever Mr. Pym may have inserted *generally* in his instructions to Mr. Vance, I firmly believe, that in the *particular* instance alluded to, it was in consequence of a conversation he had with me subsequent to my return to England in 1814, wherein I mentioned the

circumstances attending the fever amongst the troops at Carthagena, detailed from page 219 to 230, so clearly demonstrating the *local origin and non-contagious* nature of the epidemic, that he endeavours to shift his ground. As to Mr. Vance's report, it is so completely an echo of Mr. Pym's order, that did I not well know the former to be too much a man of honour to be capable of such an act, I should suppose he had carried his report with him from Gibraltar ready written, but I acquit my friend Mr. Vance of such conduct.

In the extract of his letter already quoted (see page 217) he makes an attempt to establish a diagnosis between the usual fever of the Mediterranean, and what he calls the "Bulam;" and it may be useful to examine how far there is ground for his assertions, or whether the symptoms he has assigned as *exclusively* belonging to his *nova pestis,* are not to be met with in the fever I have described. Having already referred the reader to *a preceding* page wherein this extract is inserted, I shall proceed to offer some remarks upon his diagnostics, separately: 1st, Regarding its contagious nature. I shall not (in order to prevent repetition) enter into any discussion in this place, but refer the reader to that part of the reply relative to the fever of 1810.

2d. The quickness of the pulse. He means to

infer from this, that the pulse is *always* much quicker in the "Bulam," than in the disease which has been termed the Bilious Remittent. I believe, nay I positively assert, that this will be found a most fallacious distinction, as a single extract from Dr. Rush's publication on this fever will prove. "When the epidemic we are now consi-
"dering came on with a full, tense and quick
"pulse, this convulsion* was very perceptible;
"but it frequently came on with a weak pulse;
"often without any preternatural frequency or
"quickness, and sometimes so low, as not to be
"perceived without pressing the artery at the
"wrists. In some there was a preternatural
"slowness of the pulse. It beat 44 strokes in
"a minute in Mr. B. W. Morris, 48 in Mr.
"Thomas Wharton, jun. and 64 in Mr. Wil-
"liam Lawson, at a time when they were in the
"utmost danger. Dr. Physic informed me, in
"one of his patients, that it was reduced in fre-
"quency to 30 strokes in a minute." Here then is a very different account of the pulse, from the great physician of the western world, which completely contradicts Mr. Pym's assertions.

The fact is, that in all fevers, the pulse is more or less quickened in different individuals; in some

* Dr. Rush had for some time taught that fever was occasioned by a *convulsion* in the arterial system.

from a peculiar idiosyncracy, in others from the comparative violence or mildness of the attack, and in many from their previous mode of life, &c. and the state of the pulse is generally much influenced by the plan of treatment pursued, as every one who is conversant with fever must have observed. Thus in the case of Partington, in my work, the pulse on his first coming under my care on the 20th, was from 118 to 120; on the 21st, it was 110 and irregular; and from this time it gradually subsided to its natural standard. In the second case, the pulse was 118, he was bled largely and took purgative medicines with effect, and on the 26th day, at 8 P. M. it was only 84; on the 28th at the same time it beat 70 strokes in the minute. In the third, the pulse was 110, and on the following day 70.

In Tucker's case, who was a remarkably stout man, and came from the same ship, the pulse was on his first coming to the hospital 140, but had sunk to 96 before the paroxysm which carried him off.

On the contrary, in the case of Tonge, the pulse was 118, and increased to 130, and was as frequent as 120, a very short time before his death.

In case 10th, the pulse was at first 90, and increased by the next day to 128; but from this time it gradually returned to its natural standard.

In case 11th, a patient received from the same ship, the pulse was never while under my care above 88. In both the cases communicated by Dr. Ross, the pulse was at first very quick, being in one 130, and in the other 120. It would be a mere waste of time, to bring forward any further instances, to prove the folly of this diagnosis.

Mr. Pym's next position is, that "the disease "does not bear bleeding" Now this I totally deny, *and affirm that it not only bears, but requires this evacuation for its cure; and that the practice of blood-letting and cathartics has had a success in the treatment of this fever, infinitely superior to every other.*

To substantiate the assertion above alluded to, he quotes a letter from Mr. Frazer, stating that it was attended with such ill success, that a public order was given to put a stop to it. That some men might have died who had been bled, I have no doubt; but I have reason to believe, that they did not die under the care of the gentleman who first had charge of them; he could not therefore be responsible for their subsequent treatment.

To refute this declaration of Mr. Pym, it would be alone sufficient to refer to a very interesting account of the fevers of 1813-14, and their treatment, by Mr. Humphreys, of the Royal Artillery, (No. 5, in the Appendix,)

which not only proves, that blood-letting was a safe remedy, but also that his patients recovered *most rapidly* under its use; but fortunately, I have it in my power to bring forward the most decisive official testimony on this head.

Before, however, proceeding further with this part of the subject, I wish to remark, that I have particularly pointed out, both in a preceding part of this volume, and in a paper of mine, published in the Edinburgh Medical Journal of 1812, that blood-letting, to be successful, should be employed at the *very beginning*, and carried to a *sufficient extent;* not a bleeding of a few ounces, for I well know, this will only serve to exhaust the patient, while it will have little effect in arresting the morbid actions which are hurrying him on to dissolution.. It will be seen by reference to the paper of Mr. Humphreys, (No. 5. in the Appendix,) that Doctor M'Mullin, who has long practised in the West Indies, after examining the patients labouring under the epidemic of 1814, as well before as after death, declared the fever to be the same as that he had so often seen within the tropics—not contagious—and recommended the use of the lancet, which was adopted with the greatest success.

The practice here advised, had previously been resorted to, by the Surgeons of the 67th

and 26th regiments, and I have now before me a list of the cases of this fever treated by Mr. Lea of the 26th, by which it appears that he bled *seventy-eight* of his patients, *not one of whom died.*

In a communication which the latter gentleman has favoured me with, he says, " My " general plan while I had charge of the " 26th, and what I observed practised by my " particular friend Surgeon Weld of the 67th, " was bleeding and copious purging, which " was attended with the happiest effect."

Mr. Pym states at page 297, " That al- " though patients have survived venæsection, " when the disease has been in a mild form, " and the season cool, consequent debility has " been great, and the convalescence propor- " tionably slow."

To refute so notorious a misrepresentation, the cases related by Mr. Humphreys would of themselves be sufficient; but I have most satisfactory evidence of the incorrectness of this dogma, in the list of the men belonging to the 26th regiment, in which this method of treatment was adopted, and I shall here insert the result of the evacuating plan, with reference to the continuance of the disease, during the month of November, 1814, in the above mentioned corps.

Out of twenty-two who were bled,

6 were convalescent on the 3d day
4 on the 4th
2 on the 5th
5 on the 6th
2 on the 7th
2 on the 8th
1 on the 12th.

In illustration of his general plan of treatment, Mr. Lea relates the following case of Colonel L———.

I was sent for between four and five in the morning, and found him in a state of delirium, his three servants being unable to hold him. In this ungovernable state, I could not use the lancet, therefore, I directed my patient to be brought down stairs to his bath room, where the cold affusion was administered, by means of a shower bath. This brought him immediately to his senses, and I took the opportunity to get him to swallow 20 grains of calomel; and a solution of the sulphate of magnesia was ordered every two hours. At 10 A. M. the cathartics had not operated, and he complained of considerable pain in the head, with every appearance of returning delirium. I then bled him to the extent of *forty-*

seven ounces, and remained in his room till I had relieved the bowels by enemas; *on the fourth day he was convalescent.*

On examining the *official* replies of the medical officers who were in the garrison during the epidemical fever of 1814, (for access to which I am indebted to the politeness of Sir James M'Gregor and the other members of the army medical board) I find wherever blood-letting was adopted, that it is spoken of in the most favourable manner.

Mr. Martindale, assistant-surgeon of the 67th regiment, reports as follows:—

BLEEDING.

" The first man admitted was bled, and with " evident bad effect. The syncope was so " complete, and lasted so long, that we were al- " most inclined to give him wine, and it was " not until the fourth day afterwards that his " system was rallied; on the fifth day the se- " cond stage was ushered in with every aggra- " vated symptom, *but this is a solitary in-* " *stance.* We afterwards bled *largely* during " the months of July and August, when the " disease assumed a very inflammatory form, " being generally accompanied with bilious vo- " miting and very acute pneumonia. The use of

" the lancet was then laid aside till November,
" when it appeared of great benefit, *if* employ-
" ed within twenty-four hours after the acces-
" sion of the fever."

Assistant-surgeon Brady, of the 26th regiment, says in his report, " I saw bleeding prac-
" tised at the latter end of the season with
" good effect."

Surgeon Sproule, of the Royal Artillery, in stating his practice, observes, " General blood-
" letting I did not practise, I must therefore de-
" cline giving a decisive opinion with regard to
" it; at the same time from the appearances
" on dissection, I think I have reason to regret
" not having had recourse to that mode of
" treatment." Amongst other morbid appearances Mr. Sproule mentions, " Great turge-
" scence of the vessels of the brain."

It appears then from the foregoing official documents, that blood-letting was practised in the 26th and 67th regiments, with the best possible effect, and the Paper, No. V. in the Appendix, proves, that in that portion of the ordnance service, committed to the charge of Mr. Humphreys, the same remedy was employed with the most gratifying success. To these three corps, I believe the practice was confined, and the result clearly demonstrates its superior advantages

over any other remedy, and that Mr. Pym's assertions are, on this head, incorrect.

As he has brought together a number of authorities against blood-letting, it may be necessary to notice some of them.

Mr. Pym, at page 241, says, "And so completely is blood-letting given up in this disease in Spain, that Dr. Moreno, the last person who has published upon it, does not even hint at it in the whole course of his work." If Dr. Moreno does not inform us of his using the lancet, the following extract from page 44 of that author's publicatiou is certainly no proof of his being right: "Semejantes hemorrhagias (epistaxis) en el primer periodo de la enfermedad, son casi siempre saludabales pues desminuyen algun tanto la reaccion del sistema ā que pertenecen, alivian el dolor de cabeza, hacen se presente el pulso mas blanda, é inclinan la cutis al sudor." See the note at page 231.

This gentleman has transcribed largely from the works of Doctors Rush and Curry, of Philadelphia; but, with his usual *ingenuousness,* he has *suppressed* their testimony relative to the practise of blood-letting. The passages in Dr. Rush's works, wherein he supports by *facts,* the superiority of this remedy, are innumerable; but I shall only select the following, which I

conceive will be deemed sufficiently satisfactory.

" Blood-letting (says Dr. Rush) when used " early, frequently strangled the disease in its " birth, and generally rendered it more light " and the convalescence more speedy and per- " fect." (Page 266).

" I recovered two patients who had taken " the mercurial purges, whom I bled for the " first time on the *seventh day. In those cases* " *where bleeding had been used on the first* " *day, it was both useful and safe to repeat it* " *every day afterwards during the continuance* " *of the fever:*" (Page 267).

" I am sorry (says Dr. Griffiths, addressing Dr. Rush) to find the use of the lancet is still " so much dreaded by many of our physicians; " and while lamenting the death of a valuable " friend this morning, I was told that he was " only bled *once* during his disorder. Now if " my poor frame, reduced by previous sickness, " great anxiety and fatigue, and a very low " diet, could bear seven bleedings in five days, " besides purging, and no diet but toast and " water, what shall we say of physicians who " bleed but once?" (Page 273).

" I drew from *many* persons (says Dr. Rush) " seventy and eighty ounces of blood in five

" days, and from a few a much larger quantity. " Mr. Gribble, cedar cooper, in Front-street, " lost by ten bleedings, one hundred ounces Mr. " George lost about the same quantity by five " bleedings. Mr. Peter Mierken, one hundred " and fourteen ounces in five days. The blood " in all these cases was dense, and in the last " very sizy." (Vol. I. p. 272).

" During the existence of the premonitory " symptoms, and before patients were confined " to their rooms, a gentle purge or the loss of " a few ounces of blood *in many hundred in-* " *stances* prevented the formation of fever. I " did not meet with a single exception to this " remark." (P. 125).

" The quantity of blood drawn in this fever " was always in proportion to its violence; I " cured many by a single bleeding. A few " required the loss of upwards of one hundred " ounces of blood to cure them. The persons " from whom that large quantity of blood were " taken, were Messrs. A. Brown, H. Hall, Geo. " Cummins, J. Ramsay, and George Eyre.

" But I was not singular in the liberal and " frequent use of the lancet. The following " physicians drew the quantities of blood an- " nexed to their respective names, from the fol- " lowing persons," viz.

" Dr. Dewes 176 ounces from Dr. Physic
" Dr. Griffiths 110 ditto from Mr. S. Thomson
" Dr. Stewart 106 ditto from Mrs. M'Phail
" Dr. Cooper 150 ditto from Mr. D. Evans
" Dr. Gillespie 103 ditto from Himself."
(Page 110).

" From the publications of a number of phy-
" sicians who used the lancet and mercury in
" their greatest extent, it appears they lost but
" *one in ten* of all they attended."

" A French physician who bled and purged
" *moderately,* candidly acknowleded that he
" saved but three out of four of his patients."

I now pass on to Dr. Curry's publications on the same subject, which Mr. Pym has largely quoted at page 101 of his book. It will be seen by a reference to Rush, vol. I. page 241, that this gentleman at first objected to blood-letting; but he was too honest a man to persevere in error, as the following extracts will evince.

" My experience (says Dr. Curry) both in
" 1793 and 1797, convinces me that blood-let-
" ting is not only beneficial to a certain extent,
" but is absolutely necessary in every case where
" the pain of the head is considerable, the
" pulse quick and tense, and the skin hot; and

" also when the stomach is affected with a pain-
" ful burning sensation, or feels sore upon
" pressure, especially if accompanied with
" puking and pain upon taking any mild li-
" quid into it." (Page 221),—Again, " My
" experience and observations in the year 1793,
" as well as last year, warrant me in affirming,
" that I found blood-letting, not only a *safe* but
" an *indispensible remedy,* in every case con-
" nected with unequivocal symptoms of in-
" flammation." (Curry's Observations, &c. 1798, page 209).

In a small pamphlet published by the same gentleman in 1794, he bears the fullest testimony to the highly beneficial effects of blood-letting.

" But in all cases which began with inflam-
" matory symptoms, whether they ended in
" those which indicated putridity or not, the
" following treatment was found most certainly
" successful. Blood-letting generally afforded
" relief in all cases, when the activity of the
" arterial system was evident, and the head and
" epigastrium were at the same time much af-
" fected; and this operation was found service-
" able when repeated every six or eight hours,
" for the first twenty-four or thirty-six hours
" after the establishment of the paroxysm; and

" in every subsequent exacerbation, so long as " those symptoms continued in any considerable " degree."

After the proofs I have already adduced of the utility, nay, I may say, the absolute necessity of having recourse to blood-letting for the cure of this disease; it is unnecessary to follow Mr. Pym through the whole of his quotations on this point, I shall however notice two, and then close this part of the subject, by adducing the testimony of an original observer, who could have no theory to support.

At pages 244 and 245, Mr. Pym has a long quotation from Dr. Gillespie's publication against blood-letting in the cure of the yellow fever, which it is not necessary to transcribe. Surely he must have overlooked the consequences, which must follow his adoption of such a passage from this author.

In his description of the "Bulam," he labours on all occasions to prove that it is a disease consisting of a single paroxysm of fever, never putting on a remittent form. Dr. Gillespie on the contrary, states, that the character of a remittent was evident;* and again, at pages 130,1,2, Dr. Gillespie observes, when speak-

* See the quotation at page 260.

ing of the fever which attacked the crews of the Spanish men of war, captured by Admiral Harvey at Trinidada, in February 1797, "This "epidemic appears to have been *an ardent* "*yellow fever terminating in remittent and* "*intermittent fevers,* in a manner similar to "what happened here (*i. e.* at Martinico) in "1796."*

Mr. Pym every where acknowledges that venæsection is attended with the best effects in the bilious remittent, in what way then are we to account for Dr. Gillespie's want of success? Mr. Pym by quoting his work, allows that his history of this fever is correct; how are we, therefore, on the other hand, to reconcile the two descriptions of the disease? in either way it will be fatal to this gentleman's doctrine.

At pages 247 and 248, he makes a quotation from Mr. Johnson's work, "On the Influence of Tropical Climates," and in his observation thereupon, he insinuates that fifty cases out of a hundred died under the use of the lancet; than which a more barefaced attempt at garbling could not be adduced. So far is the enlightened author of that account of the yellow

* This is transcribed from page 411, of Dr. Bancroft's work, as I have not the original with me in the country.

fever from meaning that this number would die under such treatment, that he decidedly tells us, "Fifty out of a hundred attacked by the genuine "endemic yellow fever, will shew evident signs "of amendment (in thirty-six or twenty-four "hours) within the above-mentioned period: "from this state they recover with extraordi- "nary rapidity; in one week they are restored "to perfect health."

It should also be recollected, that the patients, sent to a *Naval Hospital,* are the *worst* cases *selected* from the others on board.

I now proceed to lay before the reader the evidence of an officer of the army, which in every unbiassed mind must remove all doubt of the propriety and necessity of blood-letting in the cure of the yellow fever.

My friend, Dr. Harness, kindly allowed me to copy it from the original, which he took down from the narrator, in the office for sick and wounded seamen.

"Lieut. Douglas, of the 85th regiment, "relates, that he embarked on board the Chi- "chester, store ship, at Jamaica for England, "with one hundred and eighty men; seventy- "four of whom died on the passage to Hali- "fax, in North America, exclusive of the cap- "tain, two lieutenants, surgeon and surgeon's "mate of the ship.

"The two latter having fallen victims to the "disease, Lieutenant Douglas found himself "driven to the necessity of taking on him the "treatment of the sick, which from the great "fatality attendant on the calomel and purga- "tive plan, pursued by the late surgeon, he "(Lieutenant Douglas) was induced to adopt "bleeding, (as recommended by the work pub- "lished by Dr. Jackson, and as had been sug- "gested in his presence by the surgeon's mate "of the 69th regiment, a short time previous to "his leaving Jamaica), which proved produc- "tive of the happiest effect, as will evidently "appear by the following statement. Lieute- "nant Douglas relates, that after the care of the "sick had devolved upon him, sixty-two men, "thirty-seven of whom were seamen, were at- "tacked with symptoms of yellow fever, the "whole of which recovered by bleeding. Three "others were likewise bled, but, he observes, "so late in the disease, or not until the symp- "toms of fever were so fully established, that "they were beyond the reach of the remedy. "He then remarks,—The success in treating "the disease was so evident to the troops and "ships' company, that after a short time, they "would, on being taken ill, apply to be bled; "and he became so confident of its good ef- "fects, if had recourse to at the onset, as

" to induce him to give particular directions " to be called at any hour of the night to per- " form the operation, should any one be seized " with the leading features of the disease; and " in every case (the three alluded to excepted), he " had the happiness to see every symptom give " way or decrease; and all unfavourable ap- " pearances were removed by one, two, or three " repeated bleedings, performed at intervals of " a few hours, as the necessity of the remaining " symptoms indicated."

" Lieutenant Douglas not being educated " to the profession, and consequently ignorant " of the doses of medicines, was induced to " have recourse to glysters, when the procuring " of evacuations appeared necessary, on which, " with bleeding, as before mentioned, he rested " the means of cure."

I will not exhaust the reader's patience by making any further quotations in support of this part of the subject, as I believe I have done more than enough, to prove that Mr. Pym is in error in his assertions relative to blood-letting. I have shewn that in Gibraltar, out of seventy-eight cases in which the lancet was employed in the 26th regiment, *not one died;* that in the ordnance department under the charge of Mr. Humphreys, only one died; that it was attended with the greatest suc-

cess in the 67th regiment, and finally, both by the abstract made from the surgeon of the 26th regiment's list, and the cases specified in No. V. of the Appendix, that the restoration of the patient to perfect health has been most rapid.

I have much satisfaction in calling the attention of the reader to an interesting paper from my friend Mr. John Duke (No. VI. in the Appendix,) as an additional proof of the happy effects attending the use of the lancet in the cure of the yellow fever; and it is consolatory to know that this practice is every where within the tropics, rapidly gaining ground, and I trust the time is not distant when it will be universally adopted.

Since writing the above, my old assistant and friend, Mr. George Swan, surgeon in the navy, lately returned from Jamaica, informs me that "Whilst in the West Indies many cases, of "what is commonly called the yellow fever, "came under my care, and from the *analogy it* "*bears in its attack and progression, to the* "*aggravated form of that common to the Me-* "*diterranean, I have no doubt of their iden-* "*tity*; and I often exult in the reflexion, that "many have been snatched from impending "dissolution by the decisive practice I adopted, "the necessity of which I had been early "taught by you."

" I have never witnessed a case treated by " mercury."

The next characteristic Mr. Pym gives as marking his *nova pestis*, is, that it " *generally* " terminates before the fifth day, and is very " often attended with the fatal symptom of the " black vomiting."

By reference to page 249 of this gentleman's book, it will be found, that out of a list of eighty-nine cases of this fever, which he says he attended in 1804 at Gibraltar, only *five* became convalescent *before* the fifth day; so that his own statements, in the fullest manner, contradicts his assertions! As to the deaths, few will wonder at their being so speedy, when I inform them that the practice of giving antimonial and other emetics, was pursued by Mr. Pym, who is author of the paper in my work to be found at page 206. " In general (says he) when " I am called in the early stage of the disease, " I order an emetic of antimon: tartarizat: or " ipecac: that is, when the patient has sickness " at stomach or inclination to vomit." Which is precisely the circumstances under which their use would be likely to do the most mischief, and the period when few medical practitioners of any experience in this disease, would have ordered them.

This is not the only statement at variance with his assertions on this head; thus, when he experienced an attack of fever in the West Indies himself, he tells us at page 12, that he was so much debilitated, that it was a *considerable time before he returned to his duty*. Again at page 38, Dr. Nooth states,—" When I shall be " be able to go out again heaven knows, as all " *those who have hitherto recovered have come* " *forward very slowly*. At page 127 also, Mr. " Vance, in his letter to Sir James Fellowes, " states, that in several instances where the pa- " tients did not complain till the second day " of the disease, ' *their convalescence was pro-* " *tracted to a very long period.*' "*

But I have abundance of evidence to prove that the fever of Gibraltar is *generally* a disease of much longer duration than is represented by Mr. Pym, and the first I shall adduce is that of Mr. Donnet, of the Naval Hospital, as he is quoted with so much approbation by this gentleman; Mr. Donnet obligingly sent me six of the prescription tickets of patients he had had under his care in 1814, which on examination gives the following results:

* Compare this with Mr. Griffiths's Account of the Fever in the Leviathan at Mahon, page 152.

Men's Names.	When taken ill	Died.	Convalescent	Discharged.	Number of days ill before convalescent or dead
Francisco Martin	22d of Oct.	31st of Oct.	———	———	9
James Cabedo	20th of Oct.	———	1st of Nov.	29th of Nov	12
Charles Smith	19th of Oct.	———	4th of Nov.	12th of Dec	15
Francisco Sleaves	18th of Oct.	———	22d of Oct.	9th of Nov.	4
Pedro Labeldo	3d of Nov.	———	11th of Nov.	19th of Nov	8
John O'Donnell	29th of Oct.	———	8th of Nov.	19th of Nov	11

On referring to the official replies of the medical officers in Gibraltar to Mr. Frazer's queries:

Mr. Short, surgeon of the 60th regiment, states, that "of seventeen fatal cases, one died "on the fourth, one on the fifth, nine on the "sixth, two on the seventh, two on the eighth, "one on the ninth, and one on the tenth day of "illness."

Mr. Barker, surgeon of the 11th, observes, "The febrile action, in most of the cases, ap- "peared to terminate on the third or fourth "days, and in slight affections early on the "second day; although there were a few in "whom it continued for a *much longer pe-* "*riod.*" This gentleman further observes, that the fatal cases terminated, "One on the third, "one on the fourth, one on the fifth, one on "the ninth, one on the tenth."

Assistant surgeon Williams, who had charge

of the Lazaretto, remarks that the fatal days were the "fifth, sixth, seventh, eighth, ninth, "and tenth."

On a reference also to No. I. in the Appendix, it will be found, that of thirteen patients, said to have had the Bulam in the 7th Veterans, one died on the second day, two on the third, and two on the fourth; of those who recovered, one was convalescent on the fifth, three on the seventh, two on the ninth, one on the eleventh, and one on the fifteenth day of their illness.

At page 142 of Dr. Chisholm's Essay on the "Bulam," first edition, the following passage will be found,—"Thus, if the patient was worse "on the evening of the second day, he would "die on the third; if worse on the fourth, he "would die on the fifth; and so on as far as "the *fourteenth day*. Beyond that period I "have not seen an instance of the disease end-"ing fatally, although it has been protracted, "in a few instances, to the *twenty-first day*.

On examining the cases given by the author just quoted, it will appear that the disease he met with was commonly of much longer duration than the third or fifth days.

Names or number of the Case.	When taken ill.	Dead.	Convalescent	Discharged.	Number of days ill before convalescent or dead
Case 5th	June 10th	———	June 23d	July 11th	13
Case 6th	June 13th	———	July 3d	August 2d	20
Case 7th	June 9th	———	June 15th	July 5th	6
Case 8th	July 12th	———	July 19th	August 2d	7
Duncan Ross	July 22d	Aug. 1st	———	———	9
James Knowles	July 25th	July 28th	———	———	3
Thomas Smith	Sept. 9th	———	Sept. 27th	Nov. 2d	18
J. Smith	June 27th	———	July 11th	Sept. 6th	14
Lieut. Watkins	Aug. 29th	Sept. 4th	———	———	7

It would be easy to extend the evidence on this point, but I trust I have done enough to prove that Mr. Pym's assertions on this head, are neither founded on experience or fact.

I agree with him that the disease will occasionally terminate before the third day, particularly if it happen, that any one should follow his steps in the use of antimonial emetics; but the testimony I have adduced proves, it is very far from being generally the case.

The following is the termination of nine cases of the Mahon fever, on board His Majesty's ship, Kent, reported to me officially by Mr. Brien the surgeon, wherein *blood-letting was not practised.*

1 died on the 2d day
1 on the 5th ..
2 on the 6th ..
1 on the 7th ..
2 on the 8th day
1 on the 9th ..
And 1 on the 10th ..

Under my own care Tucker died on the fifth day of his illness, and Tonge on the fourth.

Dr. Ross, in his report relative to the Temeraire and Invincible's men, at page 158, states, that "Some of them have died as early as the "second, third, and fourth day."

It is unnecessary to institute any comparison as to the rapidity of the patient's recovery in the fleet, as that may be easily seen, by reference to the cases and reports of the surgeons in the preceding part of the volume.

I now proceed to notice the symptom of "black vomiting." Ever since the days of Hippocrates, dark coloured vomiting has been noticed as a most dangerous symptom in ardent fevers, and it is scarcely necessary to observe, that the same remark has been made by almost every writer on the fatal endemics of the West Indies.

Cleghorn, in his "Diseases of Minorca," particularly mentions this symptom; "But the ut-"most danger is to be apprehended (says this "author) if a few drops of blood fall from the "nose; if *black matter, like the grounds of* "*coffee,* is discharged upwards or downwards; "if the urine is of a dark hue, and a strong "offensive smell; if the whole skin is tinged with "a *deep yellow* and any where discoloured with "*livid spots* and suffusions."

In the cases of Partington and Smith, recorded in my work, the black vomiting took place, and Dr. Ross, at page 157, mentions, not only that he had seen it in the mate of the St. Andrew transport, but also, that his case was similar to the fatal ones in the Invincible and Temeraire. Though neither Mr. Rudland or Mr. Harvey mention this symptom, yet the Spanish Junta of Health (who unanimously declared that the fever in these two ships, and in the transports, was the same which had committed such ravages in different parts of Spain), positively assert, that the stomachs of many of these patients rejected every thing, and that bile and black blood were vomited. So determined were the Junta of Health of Mahon in the opinion of this fever being the "Bulam," that they placed both the men of war and transports, as well as the Hospital, in the *strictest quarantine,* notwithstanding the most serious remonstrances from Admiral Pichmore, who commanded the squadron in that harbour.

Don Antonio Vilaseca, physician of the Spanish army, published at Majorca an account of the fever which prevailed in the Temeraire, Invincible, and transports, in Port Mahon, during the autumn of 1811; and declared, that the disease in those ships was the *true contagious yellow fever;* but he was obliged to allow

that the contagion was not so active as he had seen it in other places. He says, " La fiebre " que está reynando en los buques Ingleses den- " tro del Puerto de Mahon es la calentura ama- " rilla disfrazada; ó mas claro es la calentura " amarilla contagiosa, no tan mortifera, ni tan " activa en contagio como ha solido manifes- " tarse en otras parages." (Page 11).

At page 4, when describing the state in which the Junta of Health, on their first visit, found the sick of these ships, Dr. Vilaseca, who was one of the number, says, " Pues que en algunos " se veia la ictericia en los primeros dias de " calentura, con mucha propension al vomito, " *y con la circunstancia de que alguno habia* " *vomitado materiales negros.*"

On the 8th of September, on another visit, Dr. Vilaseca mentions having seen the body of a patient who died that day, and amongst other morbid appearances, " Cayó de su boca una " cantidad notable de un liquido negro como " sangre disuelta por putrefaccion."

And he mentions several more cases of black vomiting, which he saw in persons belonging to these ships, who had died of this disease.*

* See Appendix No. VIII. for Dr. Vilaseca's General Account of the supposed Introduction and subsequent Propagation of this Disease.

The occurrence of black vomiting in the epidemics of Gibraltar, has not been so frequent a symptom as Mr. Pym would wish it to be believed, while it has *repeatedly* taken place in individual cases of fever when the garrison was otherwise considered healthy; as a proof of the latter, I refer the reader to page 326. I have said that black vomiting was a far less frequent symptom than has been asserted, which the following extract from the official reply of assistant surgeon Martindale, of the 67th regiment, will clearly evince: "Vomiting, in some, was pre-"sent from the commencement to the termi-"nation, but in others it only came on with the "second stage; the fluid thrown up, was, in "*one instance*, a dark brown; but in the re-"mainder who died I did not *once see the* "*black vomit!!!*"* It appears that in this regiment 115 men, 1 woman, and 10 officers were attacked, of whom 27 died.

Having thus clearly demonstrated that the whole of the diagnostic symptoms, with which Mr. Pym has clothed his "Bulam," are common to the fevers which I have described; and that blood-letting, when employed early and carried to sufficient extent, is of the utmost be-

* Surgeon Weld, in his replies, does not mention the black vomit!!

nefit in the fever of Gibraltar; it was my intention next to have noticed his paragraphs progressively; but I shall first advert to a *new* distinction with which he has *lately* invested the "Bulam;" namely, the appearance of the skin. After enumerating some symptoms which it is not necessary to notice here, at page 5, he says, "when it (the disease) terminates favorably, it "is rarely attended with yellowness of skin, which "if it does take place, is of a very pale lemon "colour." A little after he observes, "but those "wishing to form an idea of it, may see its fac "simile in the countenance of any person with "a florid complexion, during the burning of "spirits of wine and salt in a dark room; as is "practised in the game of snap-dragon, during "the Christmas gambols."

I certainly agree with Mr. Pym in this distinction so far, that the appearance he mentions does occasionally occur, for the best of all possible reasons—because I have seen it more than once myself; but I positively deny that it is always, or even generally the case, particularly in the epidemic of Gibraltar.

"In the month of October (says Dr Gilpin) "I attended different families, the numerous "members of which were attacked in succession, "and with a fever of the same type." After enumerating various other symptoms, he con-

cludes with the following; " dark vomiting, " *skin of a dingy yellow hue, unlike the bright* " *yellow of the bilious remittent.*"

Mr. Donnet in a communication which he has sent me, says " The yellow suffusion in those " who died was generally *dark,* but I have like- " wise seen it of the same shade in some who " recovered."

In the cases of the men who died as was said of the " Bulam" in 1810, it will be seen on referring to the Appendix, No. 1, that they are described as having a " dusky yellow skin."

It will also appear by reference to the works of Doctors Lining, Mosely, Rush, Curry, &c., that they all describe the occurrence of the dark yellow suffusion as an unfavourable symptom.*

More recently, Mr. Amiel in his replies to the queries of Mr. Frazer, after mentioning the yellow suffusion as a distinguishing symptom, observes, " although the disease has been of " *short duration,* convalescence in general is " protracted, and exposed to relapses, *especially* " *when the yellow suffusion has been great.*"

In addition to this I shall state, that I have conversed with several intelligent medical officers,

* Sir James Fellowes in his account of the epidemics at Cadiz, particularly mentions the dark yellow suffusion as indicative of the worst form of this disease. See page 261 and 266 of this work.

who served in Gibraltar, during the prevalence of the late epidemics, who all agree in declaring, that the yellow suffusion was generally of a dark colour.

The truth is, that the yellow suffusion is more or less dark in some, and altogether wanting in others, and of course preserves no uniform appearance; but in general the light suffusion marks a milder attack of the fever, and the dark a more dangerous one; while the patient is often in the greatest peril without having any yellowness of the skin.

The cases contained in the preceding part of this volume fully illustrate the correctness of this observation. Thus the 1st is one of a dusky yellow skin.—In the 2d and 3d, no yellow suffusion manifested itself.—The 4th is one wherein the bright yellow skin appeared.—In the 5th, 6th, 7th, 8th, and 9th, no yellow suffusion took place.—In case 10, a bright yellow suffusion shewed itself on the 3d day of attack, and on the 6th day it assumed a darker hue.

Before commencing his observations on my work, Mr. Pym has favoured us with a *minute* description of the "Bulam" under its different forms of attack, and also recommends a plan for its cure. Whoever has read his book will, on turning to page 206 of mine, find another description of this disease, and a very different

method of cure directed by this gentleman, which appears to have been written during the fever of 1804, and was sent to me by my friend Mr. Gardiner, late surgeon of Gibraltar hospital. It it necessary to recollect, that Mr. Pym has had *no* opportunity of witnessing the "Bulam" since 1804, except in the few instances which he was pleased to say was that disease in 1810; and though he has made a very extraordinary excuse for not writing on this subject before, namely, the loss of his papers in the Athenian, I now call upon him to produce the notes of the cases he saw in 1810; for not doing which, he *cannot* have the same excuse. It assuredly does appear very extraordinary, that he should have lost his papers relative to the fever of 1804, in the ship just mentioned, where he was *only* on a voyage of pleasure, being on leave of absence from his duty in Gibraltar. My reasons for asking Mr. Pym to bring forward the notes he took of the cases in 1810, are, 1st, I am confident they will *not* agree with his description of the "Bulam" commencing at page 228; and 2d, without numerous notes or cases*, it would have been impossible to have written so *minute* an acccount as he has given; and lastly, the

* See Mr. Waters's case of the men who were attacked in the 7th Veteran Battalion in 1810, page 283.

marked difference in the method of treatment he now advises, and that which he tells us he actually practised, induces me to believe that he is more indebted to Mr. Callow's library, than to any observation he made on the spot.

At page 228, Mr. Pym recommends a gentle emetic, such as a glass of water, or *weak* camomile tea;* such, however, was not the method he followed himself. "In general (says he) when "I am called in the early stage of the disease, "I order an emetic of antimon: tartarizat: or "ipecac: pulv: that is, when the patient has "sickness at the stomach, or inclination to vomit, "which generally produces perspiration, and "sometimes opens the bowels; if it does not, a "gentle purgative must be given."

He tells us also, of having suggested to the physicians at Carthagena, the administration of purgatives, particularly calomel, in much larger doses than they had been in the habit of using; and that he had advised the frequent sponging of the body with cold water. But in the original account of his practice, he only mentions "gentle purgatives," and not one word is said of the application of cold water to the surface.

* Emetics of this description will do little harm, and when the attack has followed inebriety, or repletion, are generally serviceable.

There is no allusion to James's powders, in his late publication, yet they appear by the original paper referred to, to have been an universal remedy with him. In his account of his method of treating the fever in 1804, he recommends bark; but in that which he has lately published, he confesses he has but little opinion of it as a medicine!!

The discussion of the foregoing subjects, has necessarily led me to reply to some of Mr. Pym's observations, and I shall now proceed with the remainder.

I have already entered sufficiently into the merits of the depletory plan of treatment; his remarks, therefore, on the communications of Mr. Griffiths, will not detain me long. Undoubtedly during the prevalence of a disease, such as the fever of Gibraltar in 1804, deaths will occur under every method of treatment; but in order to shew satisfactorily, that blood-letting was not successful, he should have stated the numbers which were so treated, with the recoveries and deaths, and the same with the opposite practice. He indeed holds up to us a shocking picture of the loss in De Roll's regiment, and I believe it was very great; but it should be recollected, that it was in this regiment Mr. Griffiths states, that "blood-"letting was never had recourse to; that even "purgatives were administered with caution;

"*that cold affusion and antimonial emetics were* "*solely confided in.*" It was in this regiment also, where Dr. Nooth found it necessary to dictate the mode of treatment, which, from the mortality which ensued, I feel assured, was not carried into effect. Indeed we have Mr. Griffiths's evidence to the contrary. Mr. Pym, however, attempts to throw all the blame on the use of the lancet; but an attention to some of the dates in this gentleman's book, as well as a consideration of the little probability there was, from Dr. Nooth's statement, of his ideas being fully entered into by the medical officers of that corps, when he was unable to superintend the execution of them himself, makes it more than probable, that it was under Mr. Pym's superintendence this mortality took place.

Dr. Nooth's letter, in which he first mentions De Roll's regiment, is dated on the 20th of September. His next, on the 10th of October following; and by reference to page 20 of Mr. Pym's book, it will be seen that he arrived in Gibraltar on the 18th of October. It appears by Dr. Nooth's letter of the 10th, that he was then confined by illness, with little expectation of being soon able to resume his duty; consequently, on Mr. Pym's arrival, he took upon himself the direction of the medical department. At page 36, he informs us, that the German

regiment (De Roll's) had only lost *seven men* in September, and it appears by an account inserted at page 450 of Sir James Fellowes's publication, that no less than 187 men died in this corps, during the prevalence of the fever; and supposing two a day to have died during the 18 days in October before Mr. Pym joined, there will still be 144 deaths to account for after that period, when Dr. Nooth had nothing to do with them! If the immense mortality in the artillery*, had arisen from the use of the lancet, I think there can be no doubt Mr. Pym's friend, Mr. Kenning, would have mentioned it; this, however, does not appear, and I will put it to the good sense and candour of the reader, whether Mr. Pym's *vague assertions*, can be put in competition with the *positive facts* I have brought forward, in support of the propriety and success of blood-letting.

He likewise attempts to prove, from the communication of Mr. Griffiths, that the contagious nature of the disease was *universally* acknowledged; but allows that Dr. Nooth never retracted his opinion. Surely he must have forgotten that Mr. Glasse, surgeon to the forces, not only in 1804, but also in the succeeding epidemics of 1810 and 1813, uniformly declared

* The artillery lost 201.—Engineers 123.

the disease was not contagious, and still retains that same opinion.

I shall take this opportunity of commenting on what Mr. Pym has said respecting the sequelæ of the disease at page 261, 2, 3, &c.

It will be seen by reference to the account of the fever amongst the ships of the fleet in Port Mahon, during the autumn of 1811, that besides the Invincible and Temeraire, the Repulse, Kent, and Centaur, had likewise a great number of their crews attacked with a similar disease. The two first remained in harbour, and were for a considerable time rendered inefficient; the three last proceeded to sea, and were soon restored to health. In the last mentioned, few if any relapses took place, nor was it succeeded by dysentery; whilst in the former, which remained in harbour, relapses were frequent, and dysentery in many instances followed. It must be evident, to every unprejudiced observer, that a disease occurring in the ships of the same fleet, lying in the same harbour, and except in the case of the Invincible*, all recently arrived from cruizing off

* The Invincible had lately returned from the S. E. coast of Spain, and having had communication with Carthagena, the Spanish medical gentlemen and others, attempted from this circumstance, to trace the origin of the fever to that source. What a pity it was Mr. Pym did not know this incident before! See Appendix No. VIII.

Toulon, would be likely to have been occasioned by the same causes, and, as was the case, exhibit the same symptoms. There must consequently be some reason for relapses and dysentery following in the one, and being absent in the other. This difference in the termination of the disease, I chiefly ascribe to the very improper diet given to the sick of these two ships. At page 160, I have stated that they had full meals of animal food from the beginning; and I may also add, the strong Catalonian wine was not spared. This, then, I consider the principal cause of the relapses and subsequent dysentery in the sick of these two ships, which in no other instance (except in two or three cases in Mahon hospital) occurred. Even Mr. Pym will have no difficulty in acknowledging that the fever in the Temeraire and Invincible, was such as required the use of the lancet and purgatives; it is easy then to conceive the effect which a treatment highly stimulating would produce. I have uniformly found in the treatment of fever, both in and out of England, that nothing so certainly occasions a relapse as repletion.

Though Mr. Pym may not have seen morbid affections of the viscera, follow an attack of the Bulam, the accounts of other medical authors are certainly very different. Thus Dr. Riseuno, at page 235, says "In many instances the disease

" terminates in ascites, or some other species of " dropsy; sometimes the patient becomes con- " sumptive."

Aregula, a writer of great celebrity on this fever, at page 216, has the following passage. " Los males que subsiguiéron á nuestra calen- " tura, como efecto de ella, fuéron las hidro- " pesías generales y ascitis; y con menos fre- " qüencia la calentura hética y la tisis pul- " monar." Again at page 231—

" Las resultas ó males consecutivos que he " notado entre los epidemiados (porque sellevó " generalmente este executivo mal á los acha- " cosos) han sido algunas hidropesías, que han " sobrevenido á los pacientes desde luego, y " hasta los dos, tres y quatro meses despues de " haber pasado la epidemia; los que no pu- " diendo convalecer de aquel molesto, indolente " y crónico mal, muriéron anasárquicos ó hin- " chados."

The occurrence of diseased viscera after an attack of this fever, is fully illustrated by the facts stated relative to its prevalence in the 67th regiment at Carthagena in 1812, when thirty of the men were invalided with chronic complaints. The disease then prevailing amongst the British garrison was declared by the Spanish physicians to be the same which committed such ravages in 1804 and 1810, which fact will at any

time, I am confident, be attested by Colonel Prevost, who subsequently commanded the whole garrison.

Regarding the story of Sancho and Santos, I certainly was acquainted with it when at Gibraltar in 1811, but the affidavit I did not hear of. The whole of Sancho's evidence is ex post factum, and, I am assured, had inquiry been made soon after the disease ceased, evidence of a different nature would have been found; as I shall have occasion to shew was the case in 1810. In fact, the introduction of the disease in 1804 was ascribed to many causes; by some, a person named Sancho was said to have brought it from Malaga; by another, Santo introduced the fever from Cadiz; a third, attributed it to a cargo of deals; a fourth, to the importation of a quantity of dollars, and the great majority to local causes.

Mr. Pym says he could have introduced me to Mr. Santo; and not to be behind hand in civility, I shall hereafter endeavour to make him better acquainted with Jasinto Rey the Minorcan carpenter, than he at present appears to be.

He says, at page 254, that all those who sequestered themselves escaped the disease, as well in the years 1813 and 1814, as in 1804.

With respect to the years 1813 and 1814, *I must entirely differ with Mr. Pym;* the cases mentioned at page 321, prove him to have been

misinformed, as well as the circumstance attending the illness of Mr. Pringle, the ordnance store keeper, and the wife of the officer, related by Mr. Humphreys in Appendix No. V. On examining the official replies of the medical officers, Mr. Martindale, assistant surgeon of the 67th regiment, states the following fact:—"Several men in the regimental hospital in the "south took the disease, where they had not "even *seen* a man sick with fever."

If the disease had been of a contagious nature, the cutting off all communication from without, would assuredly have prevented an attack; but several families, named in the page already mentioned, were taken ill in strict quarantine; thereby proving, in the most satisfactory manner, that it was of local origin. The circumstances related by Mr. Amiel at page 325, respecting the foreign recruits and their wives, will readily explain the escape of Colonel Fyers, his family, &c. And I shall here state some further facts, which even of themselves, would be sufficient to evince the "local habitation" of this malady.

Assistant surgeon Martindale, in the official replies so often alluded to, states, "Dillon's "regiment was quartered in the blue barracks, "near the Moorish castle; a great number of "the men took the fever, and several died; in "consequence of which, the regiment was sent

" out to the neutral ground and encamped, and " immediately the fever stopped." Again,

" The 8th battalion of the 60th regiment " arrived from Cadiz in a healthy state, and " were encamped on the Governor's meadow. " Shortly afterwards they went into town, and " were quartered in the Cooperage range; the " fever instantly raged amongst them, and both " officers and men suffered severely. They " were then sent back to the encampment, and " the disease, as in Dillon's, immediately ceased " —as if by magic."

Mr. Playfair, surgeon of Dillon's, has the following observations in his official replies. " It " is very striking that even after removal to the " camp in the Governor's meadow, while the " men of Dillon's regiment were allowed to " enter the town on fatigue duty, the fever " still continued to prevail; but from the day " of their confinement to the neutral ground, " they were quite free from it, although they " had equal intercourse and communication with " inhabitants coming from town, in which the " disease was at that time very destructive."

Mr. Short, surgeon of the 60th, attests a similar fact in his official replies. " While the " battalion remained encamped outside the " gates, very few cases appeared, and those " very slight; and after its removal again to

" the same place, the fever, with a very few ex-
" ceptions also slight, seemed to cease imme-
" diately."

Again, " Officers and soldiers who had com-
" munication with the town seemed to suffer
" indiscriminately." " I suppose the disease
" to be generated in the town, and all our men
" who had the fever, (with two exceptions) had
" more or less communication with it."

Mr. Pym says, at page 254, " Dr. Burnett
" lays great stress upon three cases of fever in
" 1804, on board the ships in Gibraltar bay, not
" having communicated the contagion to any of
" the crew." And in this he is perfectly right. But I wish to tell him, that these men were *not* separated from the rest of the sick, but remained in the sick birth with the other patients. I lay still more stress, however, on fifty men being received on board the Leyden, (a crowded troop ship) without infecting any of the others; on eleven men, who never had the disease, escaping in the naval hospital, as stated by Mr. Lamert; on the circumstances attending the illness of the foreign recruits, and the escape of their women, mentioned by Mr. Amiel; and on the history of the fever in 1810, &c. &c. Until these facts can be disproved, (and I know that to be impossible) I feel assured, that every unbiassed and disinterested man, will consider I am fully jus-

tified in the doctrine I maintain, that the disease is *not* contagious.

At the conclusion of the epidemic fever of 1814 in Gibraltar, Mr. Frazer, Surgeon-major of the garrison, proposed a series of questions to the different medical officers, and the following is the result, relative to the origin and subsequent propagation of the disease, extracted from their official replies.

Surg. Weld, 67th regiment—domestic origin—not contagious
Assis. Sur. Martindale, do.—domestic origin—not contagious
Surgeon Lea, 26th do. —domestic origin—not contagious
Surgeon Short, 60th do. —domestic origin—not contagious
Surg. Playfair, Dillon's do.—domestic origin—not contagious
Assistant Surgeon of do. —domestic origin—not contagious
Hospital Assist. Thomson—domestic origin—not contagious
Mr. Humphreys, Rl. Art.—domestic origin—not contagious
Assist. Surgeon Williams —neutral on both points
Hospital Assistant —neutral on both points
Mr. Donnet, Naval Hos.—domestic origin—contagious in a limited degree
Mr. Amiel —domestic origin—contagious in a limited degree

* This gentleman in his official replies, says "I believe "it contagious or infectious, having so manifested itself in "its progress similar to other contagious diseases. But I "observed that the infectious properties of the malady were "counteracted by exposure to free ventilation, and a strict "attention to cleanliness; and that it became inert by being "removed to a small distance from the place in which it "originated."

† Mr. Amiel remarks, "From observations carefully re

Assistant Surgeon Brady —domestic origin—contagious
Assistant Surgeon Foote —domestic origin—contagious from its running through families
Surgeon Sproule, Artillery—neutral —contagious
Sur. Barker, 11th regiment —imported —contagious
Assist. Surgeon Considini —imported —contagious.

In respect to what he says of the quarantine laws *, it is certainly not much to their credit, or rather to his administration of them, that the "Bulam" has so often appeared in Gibraltar, and the plague in Malta.

" peated, I derive my opinion, that the bilious remittent of
" the summer, and the epidemic of the autumn, are pro-
" duced by the same causes, more or less concentrated, and
" acting more or less generally; and that although the au-
" tumnal fever, *might* have been infectious in *some* instances,
" its infectious quality may be easily prevented."

* Mr. Pym, in his execution of the quarantine laws, ought at least to have been consistent; the following fact, however, will not say much for this. At the commencement of the fever of 1810, a Board of Health was established, and vigorous measures adopted to prevent communication with Carthagena, notwithstanding which, the Confounder gun-brig was admitted to Pratique, *immediately* on her arrival from that port, and Mr. T—, a passenger, was allowed to land with his bedding and baggage!!! This of course excited much discontent in the garrison, but did not produce disease.

I come now to Mr. Pym's history of the introduction, and (as he says) subsequent propagation of the "Bulam" in 1810.—The account of this disease is given from page 47 to 54 of his publication; but it is unnecessary here to quote so many pages, I shall therefore content myself with the following, which will be sufficiently explanatory. After stating the arrival of the transports from Carthagena, on the 19th of September, and the steps he took with regard to them, he proceeds thus; "During the time that "the disease had been going on, on board the "transports in the bay, the garrison continued "in perfect health *until the 20th of October;* "when, in consequence (as I must suppose) of "a breach of quarantine regulations, which, "however, could not be detected, a Minorcan "family in the south district, belonging to the "dock-yard, was attacked with the disease. "*The first information I received of it was on* "*the morning of the 26th of October,* in con- "sequence of the death of one of them (a young "man, clerk to Mr. Boschetti)*; he had been "pronounced convalescent on the 24th; having,

* It has been stated in the 5th vol. of the Medico-Chirurgical Transactions, that Mr. Boschetti was attacked in 1810; this is a mistake: not *one* in this gentleman's family, his clerk excepted, was taken ill.

" as the medical person who attended him sup-
" posed, a remission of all his bad symptoms,
" which proved to be only a prelude to gangrene
" of the stomach.

" I immediately visited the family, and found
" from the history of the case of the deceased,
" and the situation of the other members of the
" family and their friends, that the disease we
" had so much reason to dread actually existed.
" Six out of seven persons had already been
" attacked in one house, and three other fa-
" milies, neighbours, who had visited them; as
" also, a Spanish priest who resided in town, at
" the distance of a mile and a half from the
" infected district, but who had visited, pro-
" fessionally, the brother of the deceased, a car-
" penter in the dock-yard, *the first person taken*
" *ill;* and who I *suspected* of having commu-
" nicated with the infected transports in the
" bay."

" Within a few days, several persons (all neigh-
" bours of the first family taken ill) were de-
" clared to be infected; particularly a servant
" of Mr. Nichols, agent of transports. On the
" morning of the 28th, Mr. Kidstone, surgeon
" 7th Veteran battalion, also reported to me,
" the deaths of two men of that regiment, and
" that he had several other cases of fever in the
" hospital, which he suspected to be of the same

" nature;—five fresh cases of fever, were also " reported in the barracks in the course of the " day."

" I did not hesitate as to the measures which " I ought to recommend, and in the course of " the next day, the whole regiment, with the " hospital establishment, was removed to the " neutral ground. Ten soldiers, who had had " the disease in the West Indies, were left in " barracks for the purpose of whitewashing " and fumigating them, and I recommended " Mr. Kidstone to employ the same description " of men in attending the sick."

" Very few men were reported sick after the " regiment moved into quarantine; *three of* " *them, however, were taken ill in the same tent;* " six died from the disease, who were all taken " ill in the same barrack-room."

He then proceeds to state the occurrence of two cases of black vomit in the 4th Veteran battalion; the death of an officer of that regiment (Captain Boyd), and a lady who resided in town, but assisted in attending the last mentioned officer during his illness. The death of Mrs. Nichols, whose servant before died, and also a boy (the only member of the Minorcan family who had hitherto escaped) in less than seventy hours illness.

" Upon enquiry, (says Mr. Pym) it was as-

" certained that the inspector of the district, had " neglected to wash and purify the bed, which " this young man slept upon, and which had " been used by some of his family, when the " disease first made its appearance."

" The disease on shore commenced in the " Minorcan family, and ran through all the " members of it, seven in number. The six " soldiers who died were all taken ill in the " same barrack room. Mrs. Nichols caught " the disease from her servant; *and within the* " *walls of the town, (a mile at least from the* " *infected district), only two persons were at-* " *tacked with the disease,* viz. the lady who had assisted Captain Boyd, and the priest who attended the Minorcan family *."

Were the circumstances quoted above from Mr. Pym's book strictly correct, the inference to be drawn from them would assuredly be in favour of the disease having been one of a contagious nature. But knowing, as I do, that the facts are not fairly represented, I must dissent from any such opinion; and perhaps before I conclude this part of the subject, I may convince him that my enquiries were not so remiss, as he appears to think they have been.

* Mr. Pym says nothing of *any person* being infested by the lady or Spanish priest!

Before, however, proceeding immediately with the subject, I request the reader to turn to page 138, where an account is given of the fever which attacked the men in the San Juan lately arrived from England, and also to the state of the weather mentioned at page 137.

The influence of atmospheric vitiation in the production of this disease amongst these new comers, is sufficiently evident; and the resemblance the symptoms there described, bear to the yellow fever of the West Indies, will I have no doubt be acknowledged (by every disinterested person capable of judging) to be very striking; and as I shall hereafter shew, if Jasinto Rey, the Minorquin, whom Mr. Pym says was the first person attacked in 1810, did introduce the disease, he certainly was infected on board the San Juan, and not on board any of the transports; the only difference this makes is, that the Bulam came from Plymouth instead of Carthagena! In order to bring the matter to proof, I shall take the following positions in contradistinction to the statements of Mr. Pym.

1*st. I assert, that the Minorcan (whose name is Jasinto Rey) was* not *the first person attacked with the "Bulam" or yellow fever in* 1810.

2d. I positively deny that he had any communication with transports from Carthagena, as Mr. Pym "supposes."

*3d. I have to observe, that Mr. Pym must be mistaken in stating that he had not any knowledge of the yellow fever having appeared in the garrison of Gibraltar before the 26th of October, 1810.**

4th. No Spanish priest attended Jasinto Rey during his illness; consequently none could have received infection from this source.

5th. That all the men taken ill in the barrack room of the 7th Veterans, were within *the walls of the town, in a very populous part.*

6th. That the fever existed in the hospital of the 7th Veterans from the 11th of October, till the 30th of the same month, without evincing any character of a contagious disease.

I have already alluded to the fever which attacked the San Juan's men lately arrived from England, and it will be seen, on reference to page 138, that those men were sent to the hospital on the three last days of September and beginning of October. I have also, in a note, mentioned my having been informed of some of the men employed in the King's bakery being

* In the first edition of this work, I mentioned, what I then believed to be correct, that the fever of 1810, appeared first in the latter end of October; but subsequent accurate information, has proved that the persons who told me so, were deceived.

attacked with fever. Be the latter, however, as it may, Mrs. Vaughan, wife of the Commissioner's clerk, was taken ill on the *5th of October*, and died on the morning of the *13th*, with all the worst symptoms of the genuine yellow fever; and so convinced was Mr. Donnet, the medical officer who attended her, of the nature of her disease, that he immediately reported it to Mr. Pym, surgeon major of the garrison, then at the head of the medical department of the army in Gibraltar!!! In order, however, to prevent any dispute, I subjoin a copy of Mr. Donnet's account of the transaction, communicated to me by letter.

"Mr. Vaughan, Commissioner's clerk, called "at this place on the 12th of October, 1810, "between the hours of seven and eight in "the evening, when he acquainted me that "Mrs. Vaughan was extremely ill, and re-"quested my immediate attendance. I fol-"lowed him to his quarters, situated near the "north end of the south barrack, where I "found Mrs. Vaughan in a most deplorable "state, her pulse scarcely perceptible, great "inclination to vomit, cold clammy sweats, "intense thirst; at half past eight, black vo-"miting. I remained with her until ten o'clock, "and then left her in articulo mortis; early

" in the morning of the following day she ex-
" pired.

" I was informed by her husband, and a young
" woman who was attending her, that she had
" been confined to bed since the 5th of the
" month, having been seized about that time,
" with giddiness of the head, accompanied by
" retching and vomiting, and that during the
" time of her illness she had been very open in
" her bowels. I did not perceive any particular
" colour of the skin by candle-light, except her
" lips which were of a livid hue, but after death
" she was of a *dark* yellow. The matter vomited
" was very dark, and in great quantity during
" the time I was with her, and I was informed
" by the nurse, that she had frequent vomitings
" of the same kind till her death."

" The fatal symptoms manifested in Mrs.
" Vaughan's case having appeared *clearly* to
" me to be similar to those which attended the
" epidemic fevers of Cadiz, Malaga, and this
" place in 1804, where the impression of such a
" calamity was still present in the public mind,
" I thought it incumbent on me to acquaint the
" principal medical officer of the garrison with
" the circumstance, for I considered her case
" to be of a malignant nature."

Two days previous to the occurrence of this

case, one nearly similar had come under the care of Mr. Amiel, surgeon to the depôt for foreign recruits, and as this gentleman had Jasinto Rey, the Minorquin, under his care from the first moment of his attack, his testimony is of the utmost value. The following is his statement on this occasion.

" Jasinto Rey was removed to the neutral " ground in a convalescent state, and my having " attended him very carefully from the first " attack, enables me to declare, that his case " was similar to that of Mrs. M'Lean, whom " I had visited in the neighbourhood from the " 3d to the 8th of October. The attack was " marked in both by great irritability of stomach, " vomiting a quantity of deep green matter, and " indicated, in my opinion, a disease very nearly " related to the bilious remittent of this country, " of which I had previously several cases, in " the hospital for foreign recruits."

The foregoing extracts prove the first and third positions, and by the same respectable evidences, I shall proceed to establish the second and fourth.

" I had some conversation the other day (says " Mr. Donnet) with Jasinto Rey, who firmly as- " serted to me, that he had not communicated " with any transports from Carthagena in 1810, " nor with any other ships or vessels in the bay,

" except the San Juan, then lying in the mole,
" where he was sent on duty by the officers of
" the dock yard, and he is so positive in the
" above declaration, that he will have no ob-
" jection to make an affidavit, should you con-
" sider it further necessary."

" I made very particular enquiry (says Mr.
" Amiel) to ascertain whether Jasinto Rey, a
" carpenter in the dock yard, (the first man
" supposed to have had the fever in 1810) had
" any kind of intercourse with the transports
" from Carthagena, previous to his sickness;
" but it results from his own declaration, and
" the statement of his mother and neighbours,
" that for a long time previous to his illness,
" he had not had any communication with the
" ships in the bay, having been confined to his
" duty in the dock yard, and on board the San
" Juan, then lying in the mole. During his
" sickness no Spanish priest ever came near
" him, but having been removed to the neutral
" ground, he found there about ten Capuchin
" friars, and amongst them, one who had visited
" his father during his last illness (a dropsy of
" the chest), for which I had long attended him
" before he died on the 30th September, 1810."

The preceding clear and most respectable testimony, substantiates the 2d and 4th positions, which, with the 1st and 3d, destroys the whole

fabric of Mr. Pym's statement. In order, however, to remove all doubt, I shall here insert the affidavit of the person in question, the original of which has been lately sent to me.

" *Civil Court, Gibraltar,*
" *3d January,* 1816.

" Personally appeared before me, Francis " Seymour Larpent, Esquire, Judge Advocate, " and Judge of his Majesty's Court of Civil " Judicature for the Town and Territory of " Gibraltar, Jasinto Rey, late a carpenter in his " Majesty's dock yard in Gibraltar, and being " solemnly sworn, made oath, that he was at- " tacked with fever on or about the 20th of " October, 1810; that previous to his being so " attacked, he had no communication, directly " or indirectly, with the transports then lying " in the bay of Gibraltar, and lately arrived in " that year from Carthagena, in the said bay. " And this deponent further made oath and " said, that he was not visited or attended by " any Spanish priest during his illness, while he " continued in the garrison.

(Signed) " JASINTO REY.

" *Sworn before me the day*
" *and year first before written*

(Signed) " Francis Seymour Larpent,
" J. A. and J. C. Ct."

I shall now proceed to the 5th and 6th positions.

It is indubitably proved, that the disease, whether contagious or otherwise, did not originate with Jasinto Rey, the Minorquin; indeed, by reference to Mr. Kidstone's return of the attacks and deaths in the 7th Veteran battalion, (Appendix, No. I.) it will be found, that a soldier named Darby Ferguson, was taken ill on the 19*th* of *October*, with the "*Bulam*" and what will appear still more extraordinary, is, that this man was attacked *within the walls of the town*, in a very populous part, namely in the barrack known by the name of the Cooperage Range; as were all the others in the 7th Veterans, previous to the regiments moving to the neutral ground, on the evening of the 29th of October.

Though Mr. Kidstone in his return, appears to date the commencement of the disease from the 19th of October only, yet Mr. Waters, the assistant surgeon, who had the care of these men in the camp, dates it from the 11*th* of the same month, on which day Thomas Nottage was taken ill, and died on the 15th, being the 5th day from his attack. So decidedly did Mr. Waters consider the case of Nottage the "Bu-" lam," that it will be seen, on referring to the cases given by this gentleman, that he describes

all those which followed, as resembling this man's.

The fact is, the men taken ill in the barrack room, *within* the walls of the town, were sent to the regimental hospital in the south, and continued there from the 11th to the 29th of the month, *without any precaution or separation being observed, yet no one was infected!* The regiment and hospital establishment were removed to the neutral ground, on the evening of the last mentioned day, and only *one* case (if indeed it may be called so) appeared on the 30th, after which the disease ceased!

Both Mr. Pym and Mr. Kidstone appear to lay much stress on the whole of these men having been taken ill in the same barrack room; but surely when the nature of such an establishment is considered, where there is a constant intercourse from one apartment to the others, it is no small argument in favour of non-contagion that none out of this room were attacked.

Had it been a contagious disease, it is *impossible* that it could have existed in a barrack situated in a part of the town so well inhabited, or in the hospital of the regiment for *nineteen* days, where no precaution was used, without, in the one case, attacking some of the other soldiers in the barrack, or the surrounding inhabitants,

or in the other, infecting some of the hospital attendants or sick!

It is scarcely necessary, after the foregoing evidence and statement, to notice the circumstance Mr. Pym mentions of having recommended Mr. Kidstone to employ men to attend the sick who had passed through the disease in the West Indies, since this suggestion was not made till the 28th, and the fever which had prevailed from the 11th in the hospital and barrack, without infecting any one, finally ceased on the 29th; for the case of James Knight, taken ill on the 30th, who was not even a convalescent till the 13th of November following, a period of fifteen days, cannot correctly be considered the "Bulam," according to the *duration* Mr. Pym has assigned to this fever.

With respect to two cases of black vomiting having occurred in the 4th Veteran battalion, he must have been misinformed; for I can positively aver, that the late Mr. M'Affee, surgeon of that regiment, has repeatedly told me, no such symptom appeared in any of the sick in the hospital under his care.*

* Mr. Gardiner, late surgeon of the naval hospital, and (I think) Mr. Vance, surgeon to the forces, have heard the same declaration made by Mr. M'Affee, in no very mild terms.

Captain Boyd certainly died of fever in 1810. but I am informed on the best authority, that the medical officer who attended him, uniformly declared, the disease the lady alluded to died of, was not the "Bulam;" as it was his own wife, he was likely to have been tolerably well informed as to her illness.

With regard to the Minorquin boy also, he died, I have no doubt, with dark coloured vomiting, and his having slept on the foul clothes, which had been used by some of his family during their illness, may induce a presumption that he caught the fever by this means; but "there "were two Genoese, Santiago and Francisco "Prospero (says Mr. Amiel, in the letter before "quoted), the latter of whom died two days "after Joseph Rey, with the same symptom of "dark vomiting; who were taken ill in that "neighbourhood on the same day as Joseph "Rey, without having had any communication "with the foul clothes, which cannot be ex-"plained by the process of contagion. And "I observed that the district where those fevers "broke out, were then so filthy, crowded, and "unventilated, as to induce the Lieutenant-go-"vernor to order nine sheds to be destroyed, on "a space of ground of about eight hundred "square yards in extent."

In opposition to the conclusions drawn by

Mr. Pym, from the circumstance of the Minorquin boy's sleeping on the foul clothes *, allowing it to be correctly stated, I beg leave to submit the fact mentioned at page 273, relative to the wounded of the Arrow sloop being with impunity put into the beds, where so many had died in the hospital at Carthagena, without the bedding being either aired or washed. This transaction (for the truth of which I pledge myself) would alone be conclusive with regard to the non-contagious nature of the fever in question, notwithstanding he has attempted to lessen its force by his sophistry; for let it be remembered, that he gives no proof of the truth of the objec-

* At page 46 of his publication, Mr. Pym says, "Whether "the system of purification carried into effect against the "fomites of the disease of 1804, was absolutely necessary "or not, it however proved successful in 1805, as the "garrison enjoyed the most perfect health from that time "until 1810."

I do not exactly know what this system of purification may have been, but if Mr. Pym means to include under this head, the destruction or washing of the clothes used by the sick during their illness, I must entirely differ with him. I can assert from the *best authority*, that hardly a fiftieth part of the clothes were destroyed; and also, that an officer high on the medical staff, saw clothes with the *black vomit* on them, some time afterwards sold by public sale at the Almada!!

tion he makes, viz. that the weather was too cold.

At page 45 of his book, Mr. Pym states, that "about 50° of Fahrenheit is the degree of cold "that deprives the disease of existence," and though I cannot speak positively as to the months of January and February, 1805, yet I have now before me a journal of the height of the thermometer, kept regularly for two years on this coast, by which it appears to have been always above 50°, both during January and February. The argument this gentleman applies to Dr. Bancroft's statement, will *not*, as he thinks, do for mine also: considering the immense difference there is, between the *severe* winters of Philadelphia, and the *temperate* ones of the Mediterranean. But I have great reason to doubt the correctness of the assertion just quoted, for on a reference to page 191, of Dr. Rush's Account of the Epidemic Fever of Philadelphia in 1793, I find this fever continued to rage, when the thermometer was frequently below 50° of Fahrenheit; and from the 26th of October to the 3d of November, it was permanently under that degree; on the 29th and 30th of October it was as low as 28°.

Wishing to leave no doubt on this important part of the question at issue between us, I shall here introduce an extract from the 2d volume

of the Edinburgh Medical Journal, which is conclusive on this point. It may be necessary to premise, that the identity of the fever there described by Dr. Palloni, of Leghorn, has never been disputed; indeed Sir Gilbert Blane, in the paper he addressed to Baron Jacobi, on the subject of the yellow fever, expressly says, they are the same disease; and Sir James Fellowes in his work on the same subject, quotes it with great approbation. In order to give greater authority to the account alluded to, Dr. Palloni the author, states that it was signed by all the principal medical practitioners in Leghorn.

" *There cannot be adduced a single instance* " (says this author) in which the infection was " conveyed by substances which had been in " contact with the sick, and there were many " examples of individuals and whole families " having continued to inhabit the room, *or to* " *sleep in the very bed where a patient had died.* " Not *one* of those appointed to clean the " houses of the sick, were attacked; nor did " any of those who buried the dead, fall a victim " to the disease." " There were many ex- " amples of wives sleeping with their sick hus- " bands without being infected; of numerous " families in which *only one* was infected; " of children sucking their mothers till within

" a few minutes of their death, with impu-
" nity*."

Dr. Palloni further states, that " although " the commerce of Leghorn continued unin-
" terrupted, and the French garrison (several " of whom had contracted the disease) removed " to Pisa when the disease was at its height, and " *eight thousand* of the inhabitants emigrated " to Pisa and the neighbouring country, and of " these several died of the disease; but in no " instance did they communicate it to those " around them†." (See page 90, E. J.)

* Dr. Palloni likewise says, " Of the priests who attended " the sick, only one died; of the numerous practitioners of " the healing art, only three."

† The following is an extract from a letter of the celebrated Professor Fabbroni, of Florence, dated 2d of April, 1805, on the fever which was epidemic at Leghorn, in 1804.

" A gastric bilious fever, one of those which Pinel would " call *ataxiques adynamiques*, has ruined the commerce of " Leghorn, and all Tuscany; because some evil-disposed " persons propagated a report that it was the yellow fever " of America. I have been sent there twice by the govern-
" ment to establish precautions to preserve the public " health, but solely in a political view. *I have not remarked* " *that the fever was at all contagious, neither through the* " *medium of persons or of goods.*" (Edinburgh Medical Journal, Vol. I. page 509.)

To pursue this part of the subject further, might be deemed a work of supererogation, I shall therefore proceed to the remainder of the observations on the " Bulam" of 1810.

With respect to the brother, And^w^. Rey, who died in Mr. Boschetti's house, he never had any dark vomiting, as Mr. Pym would seem to infer, and no infection was communicated to those who attended him; it is therefore a more probable circumstance, that some local cause existed, in or near the infected district (as he calls it), the exhalations from which, produced the disease.

Great weight has been laid by the favourers of contagion on the circumstance of there being no marsh in the garrison of Gibraltar, and hence, that the fever in that place, could not have arisen from such a source. The following extract from Dr. Lind's work on fever and infection, evidently shews, that fevers do arise where there is no sensible effluvia, or any marshy ground.

It was lying off that part of the harbour of Mahon, to which he alludes, that many of the ships have been attacked with fever; and as English Cove in Mahon harbour, is as well known to the officers of the fleet, as Sally port at Portsmouth, any of them can tell Mr. Pym whether the above observations be just.

" In the year 1739, when Admiral Haddock " arrived with the fleet under his command in

" *Mahon* harbour, a midshipman and eight or " ten men from each ship, were ordered to re- " main on shore, with the coopers at the water- " ing place, to refit and fill the water casks. " This watering place was in a creek of the " harbour, well known by the name of *English* " *Cove.* Here the men found a very large ar- " tificial cave, dug out of a soft sandy stone, " sufficient to contain their whole number. " Their bedding was directly carried thither, " and it being in the summer months, the agree- " able coolness was deemed by them all, highly " refreshing. But the consequence was, every " one who slept in this damp place, was seized " with the tertian fever then epidemic in *Mi-* " *norca; of which not one in eight recovered.*

" It is remarkable (says Cleghorn) that both " dysenteries and tertians, *without any manifest* " *cause,* are sometimes more universal and " severe in one part of the island, in one year " than in another; and often seem, as it were, to " attack particular families with uncommon " severity; whilst others in the same place, and " the same circumstances of life, escape." (Page 123.)

The advocates for contagion will not allow that " any such thing as miasmata is produced in " Gibraltar;" but what will they say to the cir- cumstances attending the illness of the officers

and troops in the South Pavillion in 1813, recorded at page 335, or to the following quotation from the publication of Sir James Fellowes relative to the epidemic of 1804? "The unhealthy circumstance to which Colonel Colville alludes, was the public drain or sewer running from the barracks: which, from being uncovered, and from the want of water to cleanse it, was during the heats of summer extremely offensive; it was at this time particularly so, the barrack necessaries having been emptied into it, and the contents not having then run off. The huts in which so many sick inhabitants, and some of the married people were living, were built adjoining to the sewer, and some immediately over it, with a single boarded floor intervening. *The disorder prevailed particularly in this spot;* and from its being so near the barracks and canteen of the regiment, it is not surprising that the soldiers would frequent it when they could." (139.) In fact, the three first men who were attacked belonging to the 13th regiment, lived in the above-mentioned huts, as Sir James tells us; and very few will be surprised at this being the case, it would only have been wonderful, if they had remained in health.

If I had not seen how deliberately Mr. Pym garbles the statements of others to suit his own

views, (specimens of which I shall adduce hereafter), I might express some surprise at his silence respecting Mrs. Vaughan's case; his reasons for it, however, are too obvious to escape the most inattentive observer. Mrs. Vaughan's was an indisputable instance of the aggravated form of the fever, reported to him officially by Mr. Donnet; but as he could not well *suppose*, that this lady had had any communication with the transports from Carthagena, nor could trace the subsequent infection of any person who had visited or attended her, he probably thought it better not to allude to it.

It may be considered even more extraordinary, that in his history of the epidemic of 1810, he should have omitted to mention the case of Anne Barlowe, detailed at page 256; inasmuch, as during this person's illness, she was shewn to the non-believers as a genuine case of the "Bulam;" but the same reason as that assigned in the instance of Mrs. Vaughan, no doubt deterred him in this also. For though this woman lay in a small shed, within the garrison, for several days after she was taken ill, during which time her miserable habitation was crowded with visitors, by day and night, (all of whom were subsequently placed in quarantine), yet, none of these people were attacked with the "Bulam," or any other fever.

From the foregoing facts and observations, it is evident, the disease in question, did not radiate from any particular spot, but arose simultaneously, in several persons, living at a distance, and perfectly unconnected with each other. As instances, I may mention Darby Ferguson, who was taken ill on the 19th of October, *within the walls of the town,* and Jasinto Rey, who was attacked on the 20th in the neighbourhood of Scud Hill. The disease certainly appeared first amongst the men newly arrived from England, then on board the San Juan in the Mole. The case of Mrs. M'Lean, mentioned by Mr. Amiel, seems to have been the next; then Mrs. Vaughan's, and subsequently it became more general, attacking ten soldiers of the 7th Veterans *quartered in the town,* and *not* in the "infected district," as Mr. Pym will have it; so that instead of "*only two* being taken ill "within the walls of the town," there were no less than twelve!!

The favourers of the doctrine of contagion in this fever have always laid much weight on the circumstance of the disease frequently running through whole families; not considering that all the members of a family would probably be exposed to the same remote cause. Had the fever, indeed, propagated itself amongst the refugees encamped on the neutral ground, or

amongst those who were embarked on board the merchant vessels lying in the bay, there would have been great reason to suppose it was contagious; but when we find no less than eleven men, who had never passed through this fever, performing the duty of nurses in an extensive hospital with impunity; a number of men residing for three weeks in a crowded lazaretto, and escape infection; when we see many cases occur in a crowded barrack, in a numerous encampment, or in the unventilated cabin of a merchant vessel, without any of their friends, visitors, or attendants suffering; when on the other hand it is known, that the most careful quarantine, *within the town,* or the range of exhalations therefrom, did not insure an immunity; while the disease ceased, as if by magic, even in whole regiments, on their removal from its focus in the town to the neutral ground: surely it would require no common share of credulity, to believe that the epidemic of Gibraltar was any thing but a local disease. If this fever cannot be carried on board a ship in the bay and propagated; if it cannot be conveyed to Europa point, or the neutral ground, and infect others; will any one believe that it can be brought for thousands of miles across the Atlantic? It is impossible!

The disease does not always run through a

family after attacking an individual thereof, as the case of Mr. Pringle, mentioned in Appendix No. V. clearly shews. Mr. Martindale also in his official replies, says, "I have known several "instances where only one in a family, or even "in a whole house, was taken ill; of ten officers "in the regiment (the 67th) who had fever, not "one of their servants took it in consequence."

The quotations from Dr. Palloni's account of this fever in Leghorn, also prove, that individual attacks were very frequent in that city.

It would be easy to extend the observations on the foregoing facts; but in conformity to the line I determined on at the commencement of this reply, I shall abstain from pushing the arguments on this head any further.

At page 257, Mr. Pym has the following paragraph, "I could have informed him (when in "Gibraltar in 1811, or when I met him in "Malta in 1812), of several circumstances "relating to this disease, which he ought to "have made himself master of, before he at-"tempted to write upon it. I could have told "him of its peculiarities; of its attacking the "human frame but once; of its powers being "increased by heat, and destroyed by cold; of "the means taken to put a stop to it; and of "persons being employed to attend the sick

" who had passed the disease; that the medical " gentleman, (Mr. Arthur) who went on board " the transports to take charge of the sick, " caught the disease on the fourth day. I could " have told him of Mr. Gardiner's (surgeon of " the naval hospital) opinion of the disease, and " the opinion of a medical officer of such high " character in his profession, and long standing " in the service, ought to have some weight."

If Mr. Pym did not inform me of all these *suppositions,* it certainly was not my fault; for by mentioning the subject more than once to him, I gave him ample opportunity of doing so, had such been his inclination; but I could get nothing from him but general assertions.

With regard to the peculiarities ascribed to this fever, I have already discussed some of them; and, I trust, satisfactorily shewn that he is mistaken, and I shall now proceed to state my sentiments relative to the remainder.

I believe, that persons having once passed through this disease, are, while they continue in the same atmosphere, or in a southern climate*,

* Sir James Fellowes, speaking of second attacks in the epidemic of Cadiz in 1804, has the following passages which fully corroborate this opinion.

" No instance occurred of any person who had passed

less liable to be a second time attacked, as has generally been observed (as far as came to my immediate knowledge) in the ships of the fleet, where it prevailed *epidemically*.

I have said that they are *less liable;* but the following lists, of upwards of fifty authenticated instances of second attacks, in the fever of Gibraltar, most of which occurred in the last epidemic (1814), place it beyond all doubt, that this is far from being uniformly the case.

I have already (in Appendix No. IV.) mentioned several instances of second attack, and I shall now bring the whole into view in this place.

" through the disorder in 1800, having been attacked in " 1804. The same remark was made of those who had " been ill with it in South America, *as well as of the natives* " *of that country who had resided there many years,* " *without ever having had the fever or any disease like it.*"

" The Americans from the United States were less fortu- " nate, *for a great many of them were severely attacked,* " *and several died, some of whom are said to have had a* " *fever in their own country.*"

He mentions in a note that the South Americans who had not passed through the disease did not escape in 1813, but on reference to his account of the fever that year, I have only been able to discover one instance, viz. M. Mescia, a deputy to the Cortes.

	Mr. Glasse saw	2
*	Mr. Donnet	1
*	Mr. Amiel	2
*	Surgeon Short	7
	Surgeon Lea	2
*	Assistant Surgeon Brady	10
*	Surgeon Sproule.....	2
*	Surgeon Barker	2
*	Assistant Surgeon Williams ..	5
	Mr. Muir's case	1
	Total	34

The seven subjects of second attack observed by Mr. Short, had passed through the disease the preceding year at Cadiz, and were, no doubt, some of the cases seen and mentioned by Sir James Fellowes; the following is the list of them given by Mr. Short:—

NAMES.	Remarks on the fever suffered last year, 1813.	Remarks on the fever suffered this year, 1814.
Fred. Rothes	Slight attack	In the hospital from the 2d to the 13th Nov.
John Elbarbe	Slight attcak	A very severe attack but recovered
Julian Verex	Slight attack	Died with very bad symptoms
William Scherle	Slight attack	Slight attack
Henry Schuman	Severe but short illness	Slight attack
Michael Groe	Severe but short illness	Severe but short illness
Mrs. Anne Groaf	Slight attack	A mixed case with pulmonary symptoms, afterwards intermittent with rheumatism

* These are from the official replies; the others are equally authentic.

The foregoing are instances of second attack, wherein the persons alluded to, had undergone the disease in preceding years; the following are examples of the same event in the 26th regiment, quartered in Gibraltar, during the epidemic of 1814.

MEN'S NAMES.	Date of the first admission.	When Convalescent.	Date of the second admission.	Number of days intervening between the first and second admissions.
William Leekie	8th June	23d June	24th October	137
Edward Nugent	9th June	17th June	15th August	66
William Smith	11th June	14th June	30th November	171
Robert King	13th June	21st June	10th November	149
Robert Black	13th June	18th June	1st July	17
James Weir	16th June	22d June	3d October Convalescent 6th, re-admitted 20th October, convalescent 26th.	1st 108 2d 16
Joseph Comsey	19th June	22d June	9th November	142
John M'Lelland	24th June	29th June	12th August	48
—— Develin	25th June	28th June	10th October	106
William Anderson	28th June	17th July	6th August	38
James M'Comrell	30th June	6th July	25th September	86
James Grasson	25th July	23th July	18th November	115
Serjeant Rennie	5th Aug.	8th Aug.	1st November and died.	87
Henry Dawson	8th Aug.	13th Aug.	9th October Discharged 16th, re-admitted 13th Nov. convalescent 20th.	1st 61 2d 34
George Ethridge	25th Aug.	1st Sept.	26th September	31
Dav. Drummond	10th Sept.	19th Sept.	30th October	49
Thomas Farrell	25th Sept.	28th Sept.	3d November	38
Hopk. Strang	21st Oct.	2d Nov.	15th November	24
James Dogherty	24th Oct.	30th Oct.	14th November	20
Serjeant Hall	6th Nov.	13th Nov.	21st November	14
Allan Huston	8th Nov.	12th Nov.	23d November	14
Thomas M'Arty	9th Nov.	17th Nov.	25th November	Died of dysentery, 4th December. 15
Total 22				

In addition to the numbers just specified, the "many persons who assert they have had "the disease twice," mentioned by Mr. Glasse, (page 333); the statement of Mr. Weld, surgeon of the 67th, in his official replies, that, "several "men that had fever before at Cadiz and Car- "thagena," were again attacked in Gibraltar; and also the extract from Sir James M'Grigor's "Sketches of the Expedition to Egypt," (page 335) render it abundantly evident, that second attacks in the disease, "commonly called the yellow "fever," are indeed very far from being unusual.

With respect to what Mr. Pym says, of the effects produced by cold, I certainly coincide, as far as the epidemic state of the disease is concerned; for when the thermometer is permanently below 45° or 50°, the noxious exhalations are no longer disengaged; consequently, the remote cause being removed, the disease ceases.

The testimony of Mr. Amiel, however, is conclusive as to the supposed effects of heat, in augmenting the contagious properties of the fever in question, when removed from the range of the noxious effluvia; for we find by his account, (page 324), that in the Brewery Barracks, on Europa Point, the closest contact, for days together, did not infect any person; and though their wives frequently sat on their beds, during their illness, not one was attacked—they being

prevented from passing Europa gate. The circumstances communicated by Mr. Whitmarsh, relative to the escape of the seamen in the civil lazaretto, are also deserving of great consideration, as illustrating this point, for though the place just alluded to, is situated without the walls of the garrison, it is completely covered from the easterly winds by the rock, and consequently, the ventilation is imperfect; and as it was a mere temporary measure, it was built of deal boards, so that the effect of the sun in increasing the heat within the wards of this establishment, must have been very great indeed.

Another very strong proof of the futility of this doctrine may be noticed in the case of Anne Barlowe, mentioned at page 256, where no infection took place; and I am sure whoever has been in one of these miserable huts in Gibraltar, will readily agree with me, that they are any thing but well ventilated, and are, from their construction, more likely to be influenced by the heat of the sun, than any other buildings in the garrison.

Regarding the letter of my friend, Mr. Gardiner, I am inclined to view it with all the consideration it merits; but he did not, I believe, see more than two of the cases of fever in 1810; and on such a slight view of a disease, it was scarcely possible to give a decisive opinion; accordingly,

Mr. Gardiner only says, that it is of a *suspicious* nature, in his letter to the Transport Board, quoted so triumphantly by Mr. Pym, which is in conformity with the official letter he addressed to me on the same occasion.

As he lays so much stress on the opinions of Mr. Gardiner, it would have been but fair to have told us what this gentleman thought, relative to the alleged importation of the disease ; but as he has with his *usual consistency* neglected to do this, I shall request the reader to turn to page 312, where he will find that Mr. Gardiner declares the disease to have been of *local origin, and not imported.*

I join Mr. Pym, very cordially, in the praise he bestows on Mr. Donnet, and had he stated this gentleman's replies fairly, I should have had little else to do respecting this part of the question ; but as they are most shamefully garbled, I cannot help bringing them before the reader*.

* As Mr. Pym has *forgotten* to tell us Mr. Donnet's opinion respecting the *importation* of the disease, I shall take the liberty of subjoining it, extracted from his official replies— " I conceive the malady to have been generated in this " garrison, and attribute it to an atmosphere vitiated by " noxious exhalations from animal and vegetable matters, " which by a long continuance of Easterly winds, (the height " of the rock screening the town and part of the South, " thereby preventing due ventilation,) have exerted their

At page 259, he professes to give a copy of Mr. Donnet's replies to the queries put to him by Mr. Frazer, and inserts the following question and answer.

Question—" Can you support by cases, or " undeniable authority, instances of, second " attack or relapse?"

" Answer—I am of opinion, that those who " have had the epidemic once, are not liable to " be attacked a second time. No relapses have " come under my observation; I have not seen " any case of the epidemic, assume an inter- " mittent form here."

Having before me a copy of Mr. Donnet's replies to Mr. Frazer's queries, sent me by himself, I shall subjoin the *real* questions and replies here alluded to.

" Question 9th—Can you support by cases, or " undeniable authority, any instance of a second " attack or relapse?"

" deleterious properties on the system, in a manner pecu- " liar to the season and climate of Gibraltar; differing in " summer and autumn very little from the tropical Islands, " where the bilious remittent rages with severity until the " month of August, when it assumes a different type, an- " nouncing itself in all respects, with symptoms similar to " the existing epidemic."

" Answer—I am of opinion that those who " have had the epidemic once, are not liable to " be attacked a second time; *but the case I sub-* " *join is, I think, an exception.*"

" John Lewis, commissioner's coxswain, aged " 36, a stout and robust man, was on the 12th of " September last, attacked with the characteristic " symptoms of the epidemic; on the 15th his " mouth became affected by mercury, and a re- " mission of the symptoms ensued. He continued " that day in a gentle diaphoresis, and was conva- " lescent on the 17th; gained his strength rapidly " and returned to his duty on the 21st of the " same month."

" The same John Lewis was attacked on the " 6th of November, with similar symptoms, " which terminated favourably on the 20th of the " same month."—" No relapses have come un- " der my care."

" Question 10th—Have you had any sick of " the epidemic who were previously subject to in- " termittent; and has the disease assumed a dis- " tinct intermittent form in any of these cases, " or in any other?"

" Answer—I have had none sick of the epi- " demic who were previously subject to inter- " mittent, nor seen any case of the epidemic " assume an intermittent form in this place; *but* " *when I was in the West Indies I observed it,*

" *especially after we had departed from thence,*
" *and approached a Northern latitude.** "

The part of the above replies printed in italics, will explain Mr. Pym's reasons for omitting them, for they strongly tend to disprove his dogmas.

With respect to what he says of the attack of Mr. Arthur on board the Transports, it is admitted; both in the first edition of this work, and also in a paper of mine published in the Edinburgh Medical Journal for October 1812, I have myself mentioned this circumstance. *He also knows,* that we have more than once had a personal conversation on this subject, wherein I distinctly allowed the *probability* of such an accumulation of wretchedness and disease, as existed amongst these deserters from the French army, occasioning a fever of a contagious nature; but it by no means follows that this was the " Bulam, " or that it was conveyed on shore. In this opinion I differ, both with Dr. Bancroft, and the *convenient* admission of Mr. Pym.

At page 261 he says (alluding to me) " The " fact is, he has published on a disease which he " has not seen, and which he does not know the " nature of; and if it is published with a view " of recommending bood-letting in all cases of

* It is evident that Mr. Donnet considered this fever which terminated in intermittent, to be the same as the epidemic of Gibraltar.

" fever in the Mediterranean, and doing away " the quarantine regulations, there never was a " book had a more mischievous tendency."

If Mr. Pym means by this, that I have not been in Gibraltar during the prevalence of either of the epidemics, so far he is correct; but I must express surprize that he should say it is "a disease " he has not seen, and does not know the nature " of;" for he cannot have forgotten a conversation we had in London, some months before his book was published, in which I informed him, of my having often seen, and treated, the concentrated or ardent yellow fever, both at Jamaica and St. Domingo; and I trust, I profited as much by the opportunities I enjoyed of making myself acquainted with the disease, as he did, or my time has been *very* much mispent indeed; though I never found out that it was contagious, or to be cured by antimonial emetics, or capillaire and water.

I certainly have not recommended bloodletting "in all cases of fever in the Mediterra- " nean," for I know, that *a very great number* which occurred in the late epidemic in Gibraltar, required nothing beyond a purgative, rest and temperance for their cure*; but I do most

* Mr. Lamert, who, as I have before stated, had charge of the General Military Hospital, in his communication to me, says, "four cases out of six were slight, requiring nothing be- " yond a purgative, rest and temperance for their cure."

strongly and confidently advise the use of the lancet at the period, in the manner, and under the limitations I have before specified—for blood-letting is the only remedy in conjunction with Cathartics, which has as yet shewn any *decided* effect, in curing this dreadful malady.

The superior success attending the use of this remedy, is now fully established by the evidence I have adduced; and I trust hereafter, that this practice, which was so successfully adopted by Messieurs Humphreys, Lea, and a few others in the late epidemics of Gibraltar, will be universally followed. Mr. Pym is heartily welcome to

My friend Mr. Gardiner, observes, "I agree with Mr. "Lamert in those cases; when medical men soon visited "their patients, the result was generally favourable, and I "stated the same before to you."

Mr. Amiel, after describing the symptoms of this fever in its aggravated form, adds, "but fortunately, as it happened "in the two last epidemics, *the great majority of the cases* "*are milder*;" and again, "the form of a mild remittent, is "often seen close to the most malignant type of the epide-"mic, at the same time, and under equal circumstances of "exposure."

Mr. Donnet, in his communication, says, "I heard that "*numbers* were affected *slightly*, and passed through the "disease without any other medical aid, than a dose of "Epsom Salts, or other laxative medicine." The testimony of Mr. Martindale, of the 67th Regiment, relative to the non-appearance of the black vomit in that Corps, will no doubt be recollected by the reader.

all the credit and satisfaction he can derive, from his *superior* treatment of the "Bulam" in 1810, when out of thirty-eight attacked—twenty-three died!—but if his book be published, with a view of discountenancing the use of the lancet in the epidemics of Gibraltar, and of causing the whole dependence of the inhabitants to rest on quarantine regulations, for their escape from the disease, a more ineffectual mode was never suggested, nor did a more dangerous production ever emanate from the press.

It was natural to suppose he would advocate the cause of quarantine, as he has so long derived, and is (I believe) still deriving, so much pecuniary advantage from it. But I should be glad, before I can join in recommending this restriction, as the *only* means of preserving Gibraltar from another visitation of this fever, to see some better proof of its utility than we have hitherto experienced. In 1813 the garrison of Gibraltar was in strict quarantine for several months before the malady made its appearance; and a Board of Health was sitting almost daily, on account of the Plague, which had broken out at Malta; but, as my friend Mr. Gardiner emphatically observed in his letter to me, "for months I called the attention of the Board of Health to this subject; (namely, the filthy and crowded state of the garrison,) I repeatedly told

" them, while we were sitting to devise means to " keep out the Plague, the seeds of disease had " taken deep root within." Too truly were his predictions verified!

With respect to the returns of health in the garrison, on the 20th of December, 1813—1814, I shall only observe, that by the list with which Mr. Lea has favoured me, it appears that no less than fifteen men were sent to England, (invalided I presume) from this regiment alone, who had suffered an attack of the fever in 1814; one died with consumption, and another with dysentery: therefore, it is not wonderful, that cases of chronic disease do not appear on these returns.

I have already in the preceding pages entered sufficiently into what Mr. Pym alleges as to the duration of the disease, and proved it to be of *much* longer continuance, than he would have us believe; I shall not therefore stop to notice any of the passages relating to that point here.

Concerning what he wishes to establish relative to there being no remission in the epidemics of Gibraltar, I so far agree; that I believe it to have been more generally a continued fever than otherwise, as was the case in that of the fleet, though very many exceptions have undoubtedly occurred in the former, and some in the latter. Mr. Amiel states in his official replies, that, " in " many instances a remission becomes sensible on

" the second day, and the disease is protracted " under the type of a *remittent fever*, from the " 7th sometimes to the 9th, but seldom later " than the 11th."

" Early in the season (says Mr. Martindale,) " I observed no distinct remission in this fever, " but latterly it has put on a decidedly remittent " type."

In this gentleman's observations respecting the use of mercury in this disorder, he says, "an " officer of the 67th, in whom the disease put on " a decidedly remittent type, had constantly sali- " vation during the remission, and on the exacer- " bation coming on, it as regularly disappeared."

The Surgeons of the 26th and 27th regiments, declare in their official replies, that the disease in 1814 was the *Bilious Remittent* *, from which I

* The following are the replies of Messieurs Amiel and Donnet, to the first part of the 3d query.

" Question, in what phenomena do you consider it to " assimilate with bilious remittent, or with typhus; and " wherein does it differ with these disorders?"

Mr. Amiel's reply;

" I believe that our epidemic differs only in degree " from the bilious remittent fever, and that those two dis- " orders have one and the same origin; they are chiefly " fatal to persons of the same constitution; and the form of " a mild remittent, is often to be seen close to the mos " malignant type of the epidemic, and under equal circum-

have a right to infer, that they both saw remissions. At Carthagena in 1812, remissions were still more frequent, and though Mr. Pym has attempted to deny, that this was the "Bulam," I appeal to Sir James M'Grigor, and Sir James Fellowes, whether the medical officers on this station, did not report the disease which existed amongst the British troops quartered in Carthagena, in the autumn of 1812, as the *contagious yellow fever*, which had so often visited this unfortunate city before.

Mr. Pym also maintains, that those attacked with this fever, *never* relapse; but this assertion is as groundless as the foregoing, and as easily disproved. "I have *frequently* observed *relapses* "in the epidemic fever (says Mr. Amiel), after "all the morbid symptoms had been overcome,

"stances of exposure: the symptoms in each seem only to "mark gradations of the same disease, and the types more "or less *remittent*, are determined by the difference of seasons, constitutions, and by the greater or less virulence of "the exciting causes."

Mr. Donnet's reply;

"I consider the epidemic assimilated to the bilious "remittent, as both diseases appear to act chiefly on the "organs of the biliary system, and the difference I observe, "is, that the epidemic attacks with more severity, and approximates itself more to the typhoid form, by the ravages "it makes on the nervous system."

" debility excepted. *In many instances* I had " reason to attribute them to an improper con- " duct of the patient, such as exposing himself to " cold, or making use of food unfit for his situa- " tion, &c.; but in some I have been at a loss to " find out a cause, to which I could impute such " a regression to sickness."

Again—" Although the disease has been of " short duration, convalescence in general is " protracted and exposed to relapses, especially " when the yellow suffusion has been great."

Surgeon Weld, of the 67th regiment, states, that four relapses took place in that corps in 1814, and Mr. Martindale, his assistant, more particularly mentions them. This gentleman says, " the remissions in those who relapsed were " most perfect; the relapse came on before they " left the hospital, and I firmly believe they " were not guilty of any excess, nor exposed to " any exciting cause of fever."*

Surgeon Lea, of the 26th regiment, in his reply to this query, says, " I can unquestionably " support by cases and undeniable authority, " instances of second attack and of relapse under " my observation; both attacks were decidedly " marked; between which, there was a perfect " remission of all the symptoms."

* Two of the relapses here mentioned died.

But the authority of Aregula will be considered *conclusive* on this point. At page 63, of Sir James Fellowes's *Reports, &c.* he states from this author "relapses were *very* frequent and "fatal, for when a patient found himself getting "better, he perhaps walked out, and not having "strength, this treacherous disease carried him "off suddenly."*

At page 269, Mr. Pym, makes a quotation from page 10 of my work, beginning with the "words—"in many instances," and ending with "Dr. Cleghorn," on which he observes, "This last paragraph has every appearance of "being borrowed from some author who has "treated of the *causus* or *ardent bilious fever;* "for it certainly does not correspond, either "with the cases inserted in his publication, "or with the reports of the medical gentlemen "of the fleet, &c."

Now I confidently refer to the cases treated under my own care, for the truth of my assertion, for in none of them, with the exception of Shipley's, (Case 9.) is there any distinct remission, and I positively deny that I have copied this, *or any other* paragraph, from any author, without designating it. No doubt, Mr. Rudland and

* Several of the medical officers of the garrison of Gibraltar likewise mention having seen relapses.

Mr. Harvey may have seen what they considered distinct remissions, as I believe they do occasionally occur; but the same disease, amongst the same ship's company, at the same period, exhibited no distinct remission on board; as can be attested by my friend Dr. Ross, who had the care of those remaining on board the Temeraire.

In Mr. Shand's first report for October, *no* mention is made of *remissions*, but in December there appears to have been a remission in *some cases*, which is precisely what occurs in the epidemics of warm climates, and especially in the fever lately called the "Bulam," as may be seen by reference to the works of Rush, Aregula, and Mosely.*

I come now to another example of Mr. Pym's talent for misrepresentation.—At page 270, he has the following quotations from my work:—

1st. "Dr. Ross, who was passenger on board "the Temeraire, in his report upon the cases in

* Aregula in his description of the epidemic at Malaga, in 1803, says, that at the end of November the fever assumed the tertian and quartan type of an intermittent, which, he states, is always a sign of the decline of the epidemical malady. [*Edinburgh Journal*, Vol. I. p. 449.]

He also speaks decidedly of having seen remissions, and at page 200 of his work recommends the administration of bark, in substance, tincture, or extract, if the remissions should be regular.

" this ship, page 156, says ' In most of them " there was considerable irritability of sto- " mach: but I did not witness the black vo- " miting, except in one case." Here Mr. Pym makes a full stop. If the reader will turn to the above page, he will find the passage alluded to, where there is not a period as this gentleman has found it convenient to place it, and he will judge, whether the whole context does not convey a very different meaning; for Dr. Ross adds, after detailing the case in which he saw the black vomit, " though I did not witness " this case at its commencement, I am particular " in endeavouring to describe it to you, *from a* " *conviction of its similarity to the other* " *fatal cases in the Temeraire and Invincible.*"

2d. "Mr. Morgan, surgeon to the Temeraire, " is of opinion, that this fever has not the least " resemblance to the yellow fever, which he has " witnessed in the West Indies; but on com- " paring the symptoms with that described by " Dr. Rush, as it occurred at Philadelphia, in " 1793, a great similarity will be perceived; but " that in the present instance is much more " mild, and in general not so rapid in its pro- " gress." Here Mr. Pym also concludes his sentence, leaving out the following words; " *and* " *yet I believe even here, some have died as* " *early as the second, third and fourth day.*"

I certainly am not answerable for the *extraordinary* opinion entertained by Mr. Morgan, but I think I can in a great measure account for it. On the breaking out of the fever, the inhabitants of Mahon took the alarm, and the ships and hospital having been visited repeatedly by the Spanish physicians of the Junta of Health, *they unanimously declared that the fever was the contagious "Fiebre Amarilla,"* which Mr. Morgan denied; the former, however, persisted in their opinion, and both ships and hospital were put in strict quarantine. Well might Dr. Ross say the cases had "a great similarity," when the Spanish physicians, who have had but too many opportunities of witnessing this disease, declared it to be the *contagious yellow fever, the same that had appeared at Cadiz, Malaga, Carthagena, &c.** If the number of slight cases

* At the period this fever first broke out amongst the ships' companies of the Temeraire and Invincible, a medical gentleman of the name of Milburne arrived in Mahon, and I believe paid *one* visit to the sick of these ships, and afterwards published an address to the inhabitants of the island, assuring them that the disease was only the bilious inflammatory fever. The following is an extract from the reply of a medical gentleman of the Junta of Health, to this address, entitled, "A Refutation of the Opinion of Mr. Henry Mil-
" burne, published at Mahon, 24th Sept. 1811."

"In my opinion, Mr. Milburne would by no means have

be compared with those which occurred in the epidemics of Gibraltar, in the years 1813-1814,

termed the fever of the above-named ships, the *common inflammatory bilious*, had he had the satisfaction of inspecting in place of a few, many of the bodies of those who have laboured under this disease. Had he often visited the sick in the hospital, or received a correct description in this particular, he would then have allowed that such patients offered the same symptoms I am about to describe, and conformable to those the Junta of Health observed in these patients."

"These symptoms are pains in the head, eyes dull, regardless or sparkling, conjunctiva yellow; face of the colour of saffron; in some of the sick, epistaxis; in the greater number the tongue white; in others streaked, and in some black; in the majority considerable thirst; respiration hurried, and performed with difficulty; inflammation of the throat; in one patient singultus was observed; a greater or less degree of pain in the epigastric region: nausea and vomiting of all substances taken into the stomach; and in some even of *bile and black blood*. The stools in many of a dark ash colour, and almost black; pulse frequent, hard and accelerated; prostration of strength; a careless and dejected appearance; and some were ignorant of their situations; in almost all, pains in the limbs; delirium in a single patient; a general yellow suffusion in many; cold sweats more or less profuse in a great number; suppression of urine."

"Externally inspecting those who have died, we have always found the whole body yellow; in one patient we met with large livid blotches on the breast, in another two large black lines on the abdomen: in all, the parts about the pudendum were black; in two or three there were petechiæ,

I have no doubt it will be found, that the attacks were in general more severe in the ships in Mahon, than in that garrison during the above-mentioned years.

Mr. Pym says the "Bulam" has never existed in the Mediterranean during the first six months of the year; but in this he is mistaken, for the surgeons of the 26th and 67th regiments, with the assistant surgeon of the latter, state in their official replies, that the fever of 1814, began in each of these corps on the 7th of June; and by the list of men attacked in the 26th regiment,* it appears to have gone on progressively from that time, some being taken ill almost daily, and the symptoms becoming gradually more severe as the season advanced.† Mr. Pym allows that the disease will exist, with the thermometer at 50° of Fahrenheit; but we have seen, that it continued to commit its ravages in Philadelphia,

and in almost all were observed black evacuations, except in a single one, in whom black blood was observed to flow from the anus; in all were found black or red blotches on the parts which had suffered from compression."

* Forty were taken ill in June; 17 in July; 25 in August; 36 in September; 53 in October; 61 in November; 3 in December. Total 235.

† The following account of the "*Fiebre Amarilla,*" as it appeared in Medina Sidonia, in 1801, *when all the sea-ports of Andalusia enjoyed the most perfect health,* must be

when the mercury was considerably, and permanently below the degree he mentions.

deemed particularly interesting, and is one of the strongest proofs of the local origin of the Spanish epidemics. This city is situated at least thirty miles in the interior, and the fever had not shewn itself there before :—

TRANSLATION.

Short description of the Yellow Fever, with which Medina Sidonia has been afflicted, from the middle of August to the commencement of November, 1801, *written on the* 17*th September of that year, by Dr. Tadeo Lafuente, with the concurrence of all the other professional members of that city.*

The fever commonly begins without any prelude, by shiverings, the pulse is full, and the patients complain of throbbings in the temples; they feel a severe pain of the head, and of the eyes, these are very heavy and cannot well support the light; the countenance is flushed. Some of the patients feel pains all over the body, and all of them generally complain of the loins; the heat differs little from the healthy state; the tongue in some is perfectly clean, and reddish, in others quite white, and in others white only on the edges, with a dark streak in the middle; the latter, in the progress of the disease, have the tongue entirely dry, and *lentores circa dentes,* while the former have it moist all the time; they feel but little thirst, or none at all, and the patient who feels it on the first day, is regularly free from it on the second; the urine on the first day is hot and reddish, and afterwards quite natural, but leaving a deep sediment; the blood in the bason has a fine colour, and does not present any serosity; it is but seldom that any of the patients vomit at

During the whole winter on the S. E. coast of Spain, the thermometer is seldom or ever below

the beginning, but almost every one has nausea, and complains of anxiety.

But few remain in that state beyond the second day; there are some who get quickly rid of the disease by a perspiration more or less abundant, merely remaining in a state of debility and want of appetite; the weather, however, is not very favourable to perspiration, and in most patients the heat disappears without any critical evacuation; then commence prostration of strength, and universal debility, with a pulse slow and feeble, very distant from that state which is generally called febrile; nausea and vomiting decidedly appear, and in a few patients, a slight yellow suffusion manifests itself about the eyes from the third to the fourth day.

All these symptoms rapidly and regularly succeed each other, on the second, third, and fourth following days, and although, for the present, there is a greater number of patients who have nausea than vomiting, these nauseas are easily augmented to vomitings, at the sight of any food, or on drinking. *The vomitings are commonly green bilious, or yellow, but within these few days* there have been as many as eight instances (one half of which have proved fatal) of a dark vomiting, resembling, in colour, clear and liquid coffee, and we observed, last evening, another more viscous and dark, in the Secretary of the Town Council, who died in the night; the external heat, by the accession of an internal one, decreases successively in such a manner, that the patient appears to be in a Lipyria; the respiration is laborious, with frequent sighings; without feeling much thirst, the patients relish cold water; the pulse sinks so much that it disappears with the greatest facility; even at this period in some patients

50°, and on all the coast of the Mediterranean, exclusive of the Adriatic and immediate vicinity

there appears no yellowness, but in others, it becomes perceptible from the fourth day, about the neck and chest; large livid spots have not been observed while the patient is alive, but merely small purplish petechiæ; several hæmorrhages have occurred, one uterine about the fifth day, two of the nose, four or six of the mouth and nose about the sixth or seventh day, which have all proved immediately fatal; and one has been observed from the eyes of a girl ten years old, which having appeared jointly with the vomiting on the first attack of the disease, stopped, and allowed the disease to go through its regular stages, until the sixth day, when the patient died; out of six patients who have had liquid stools of a dark colour, though not quite black, one only has recovered. In the fourth part of those which ended fatally, hiccup has been observed from the time they have been in a Lipyria; and of those who had the hiccup only one has been saved. There is no case of convulsion, none of delirium; anxiety and extreme agitation are sometimes met with, and at other times such quietness and tranquillity, that some hours previous to death the patients are speechless, and lie like dead.

But few die after the seventh or before the fifth day, although instances are not wanting of persons who have died on the fourth; *those who recover, remain in a state of debility and want of appetite, and now and then with a yellow hue on the eyes, which continues for a long time.*

Yellowness does not often appear during life, but it is very perceptible soon after death, so that out of the eight dead bodies we examined yesterday, seven were decidedly yellow, and one was covered with large livid spots on the neck, chest and

of Toulon, from the end of February till the middle of December, the average height is generally from 55° to 60°, 65° and upwards; so that according to his own rule, the "Bulam" as he calls it, cannot be excluded for more than ten weeks in the year from the Mediterranean, by this cause!!*

arms, which had not been remarked during the patient's life.

Although the essential nature of this fever does not differ from that which I observed last year in *Alcala, it has not, hitherto been so malignant, undoubtedly from the heat being more moderate, from the disease having recently broken out,* from the locality of the town, and from some other causes. At this moment the disease appears only in three or four streets, which form the ward of Santa Catalina; it attacks every individual in the different houses, except the children at the breast; some houses have lately lost two patients, one three, and another four. Many country people have been suddenly attacked with the disorder on coming from the country to the town; but it is very remarkable, that this chiefly happens to those who have houses in that ward, or keep up an intercourse with it.

* Sir James Fellowes is entirely of a different opinion with Mr. Pym in this respect. At page 209, of the *Reports on the Pestilential Fever of Andalusia,* this author mentions a malignant contagious fever having appeared in 1810, amongst the French prisoners confined in the hulks at Cadiz, which *arose from extreme misery, filth, &c.* the mortality from which was so great as to arouse the attention of the Spanish government in *March.* At page 230, Sir James, when endeavouring to

He states, at page 273, that I have confounded three diseases, namely, "the 'Bulam,' bilious

trace the introduction of the *yellow fever* into the town of Santa Cruz, in the island of Teneriffe, *from Cadiz*, and lamenting his want of information, says, "There may have been reasons for not giving me the information I required. I know, however, that a vessel or vessels sailed from Cadiz with French prisoners on board, to the Canary Islands, and that these prisoners were taken out of the pontons or prison ships, in which, as I have before stated, the most virulent and contagious fever had prevailed."

The same train of reasoning will also be found in his account of the epidemic at Malaga in 1803, which he thinks was introduced by two French troop ships, *Dessaix* and *L'Union*, one of which arrived from Marseilles on the 18*th of May*, after a passage of 21 *days*, and the other on the 30th of June. M. Delestra (his informant) had charge of the sick, and states, that the diseases with which the men in the two ships were attacked, were the fevers "*connues sous le nom fievres des hopitaux, prisons, campemens, et vaisseaux, suivant Pringle, Huxham, Monro, Tissot, &c.* (pages 172-3); and at page 175, Sir James says, "These are the facts stated with respect to the vessels in question, and the contagious nature of the disorder which appeared on board of them. From the inadequate precautions which were taken by the Spaniards, to cleanse and purify their ships, it is not unreasonable to conclude, that infection may have been communicated from them to the town, through the medium of boatmen, smugglers, and others."

He unquestionably means, that the fever which roused the attention of government in *March*, was the pestilential fever of Andalusia, for he cannot have conceived that a Typhus

" remittent, and bilious continued fevers," and it may suit his views to do so; but I affirm, that such is not the case—the occasional difference n the symptoms of the fever I have treated of, having arisen from peculiarity of habit, season, local situation, or treatment. As a proof of his talents at nosological arrangement, he, with admirable consistency, says, " Dr. Ross and Mr. " Morgan describe the bilious continued, Mr. " Rudland, the bilious remittent;" surely he must have forgotten, that the sick under the care of these three gentlemen, were *all* from one ship, the Temeraire!! He acknowledges that Mr. Boyd's cases were the " Bulam;" I shall be glad, therefore, if he will explain why the " Bu- " lam" should only appear in the Repulse, and the bilious remittent and continued fevers in

fever, arising amongst prisoners from extreme wretchedness, filth, &c. by being transported to the Canary Islands, should *there* become the " Bulam," or yellow fever. Nor can he have supposed, that the fever known by the name of the hospital, prison, camp or ship fever, according to Pringle, by being brought from Marseilles, and introduced into Malaga, should *there* be *changed* into the yellow fever.

It is evident from these passages, the author thought that the " Pestilential Fever of Andalusia" could exist in February and March; and also, *that he does not believe* this fever (the " Bulam," if Mr. Pym likes that name better) is a disease *sui generis*.

the other men of war, lying in the same harbour, under precisely the same circumstances, having all arrived to refit, after a cruize off Toulon, (the Invincible excepted) and having frequent communication with each other, and subsequently with the whole fleet. Such, however, was not the opinion of the intelligent surgeon of the Repulse; for he states in his medical journal, and has often done so in conversation with me, "that it was the same disease he had repeatedly "seen in different parts of the Mediterranean, "and once before in Mahon harbour," in May, 1810.

The next paragraph I am to notice, is a quotation Mr. Pym has made from page 8, of the first edition of this work, which he says I contradict at page 10. It will only be necessary to place the two paragraphs opposite to each other, in order to shew the injustice of this accusation.

Page 8.	Page 10.
"In the severe at-	"These are the symp-
"tacks, about the third	"toms which mark the
"day, there is often an	"progress of this fever
"appearance of a com-	"under its most formi-
"plete remission, but	"dable mode of attack,
"the evening puts an	"or when it has been
"end to the delusion;	"neglected or impro-
"an exacerbation takes	"perly treated. In

" place, with great in-
" crease of all the dan-
" gerous symptoms. Un-
" happily this deceitful
" period has often been
" mistaken for a real
" remission of the symp-
" toms, and both tonics
" and stimulants have
" been given with a
" view to prevent a re-
" turn of the paroxysm;
" but vain indeed are
" all such efforts, they
" serve only to increase
" the malady."

" many instances it pro-
" ceeds through its
" whole course, bearing
" strictly the form of a
" continued fever; in
" others there is a de-
" ceitful remission about
" the third day. But
" in by far the greater
" number of cases,
" though there are eve-
" ning exacerbations,
" there is seldom any
" evident and clear re-
" mission in the morn-
" ing.

" The most attentive
" observation by my-
" self, and others on
" whom I could rely,
" has failed to detect
" the distinct remissions
" ascribed to this dis-
" ease by Dr. Cleg-
" horn.*"

"* The most part of these fevers, (says Cleghorn) make their " appearance in the shape of true simple or double intermittent " tertians. The cold fit seldom lasts above an hour or two,

I have no hesitation in repeating, that I have not been able to detect a complete remission, until the final solution of the disease, unless the case of Shipley, already alluded to, be considered an exception. But in writing the history of this fever for the use of others, it was my duty, not to overlook those, said to have been observed, by the medical officers of the Temeraire and Invincible on shore, which prove, that they do occur in some cases of the Mahon fever, as the testimony of Mr. Amiel and Mr. Martindale shews, they *frequently* happen in the epidemic of Gibraltar. The remission which I have termed deceitful, is that which takes place, previous to the appearance of the black vomit, or other dan-

"and as it goes off, some bilious matter is discharged by vomit "or stool. Then follows an intense heat over the whole body, "which raises the mercury in the thermometer to the 103d or "104th degree, and lastly, a profuse sweat puts an end to the "paroxysm. The apyrexy is *tolerably complete*, though for "the most part the patient complains of a disagreeable taste, "loss of appetite, head-ache, pain in the back, and pit of the "stomach on a full inspiration. The pulse during the inter-"mission is almost natural."

The reader can easily judge whether the cases I have inserted were *simple or double tertian intermittents*—whether the *apyrexy was ever tolerably complete*—or if an *intermission*, with the pulse *almost natural* took place until the *final* solution of the disease.

gerous symptoms; and it will be recollected, that the mortality was not *quite so great* amongst the patients under my care, as at Gibraltar in 1810, when Mr. Pym was at the head of the medical staff of the garrison. The plan of treatment I pursued, was entirely different from his; I do not allude to that which he has lately *manufactured*, but to what he *actually followed* in 1804. Mine was calculated to prevent that inflammation and gangrene of the stomach, which his must have so often produced and increased.

The case of Tucker requires little notice; the morbid appearances (which this gentleman with his *accustomed candour* has omitted) will convince every one who knows any thing of the pathology and treatment of this fever, that nothing but liberal and repeated blood-letting at the commencement could have saved this man; but it did not follow, because this had not been done, that I was to abandon the patient to inevitable death, without an effort! When Mr Pym presumes to censure the practice of others, he should call to his remembrance the events of 1804 and 1810, and the numbers, which, as Dr. Mosely emphatically expresses it, "have vomited away "their lives," by nature's index being mistaken, and antimonial emetics had recourse to.

Mr. Rae's case is an instance of the fever of Carthagena, after preserving a continued form

for eight days, in a broken constitution, terminating in a remittent type, as it has already been seen the *epidemics of Gibraltar and Malaga* have often done.

I have before stated, that the medical officers of the 67th regiment, and also the native practitioners, declared unanimously, that the fever which prevailed at Carthagena, amongst the British garrison in that place during the autumn of 1812, was the same as that which committed such ravages in 1804, &c. in that city; and I am now enabled to confirm this by the highest official authority, namely, that of Sir James M'Grigor, from whose paper in the 6th vol. of the Medico-Chirurgical Transactions, the following quotation is made.

" Sir James Fellowes made me the same fa-
" vourable report of the state of the small divi-
" sion of the army left at Cadiz. Part of this
" division had joined us the second campaign,
" *and part had been sent to Carthagena,* where
" General Ross commanded. *Dr. Wright,*
" *General Ross, and many officers and men*
" *were lost by the same contagious fever, which*
" *had made such havoc at Gibraltar, and most*
" *places on* the coast of Spain." This fever, the " Bulam" of Mr. Pym, I have traced in the most satisfactory manner to have arisen from marsh exhalations; and I have proved by *numerous* cases having been received on board the

Leyden, lying in that port, *without infecting any person*, that it is not contagious.

The cases communicated by Mr. Boyd, Mr. Pym acknowledges to be the "Bulam," and he appears to do the same, by the manner in which he has introduced, and remarked on, that of Tucker. The morbid appearances observed on examination after death in the latter, correspond precisely with those found on dissection, in the epidemic of Gibraltar. The cases of Partington and Smith also, from the same ship as Tucker, are pure instances of the disease "commonly called the yellow fever," and in each of these, the vomiting resembling coffee grounds, (the black vomit) occurred.

The case of Burton, is one which was treated *immediately* on his attack, and the decisive measures pursued, arrested it *in limine*,—before the febrile paroxysm was fully formed. Had an emetic of Tartarized Antimony been ordered for this patient, I should have had a very different train of symptoms to have prescribed for on the following morning.

Mr. Pym says, at page 197, "the cases ex-
" tracted from Dr. Burnett's publication, prove
" that he has confounded three diseases, and
" that his history of fever does not correspond
" either with the detailed cases under his own care,
" or with the reports of the medical officers of the

" fleet;* that the whole of his publication, as " far as it relates to the fever of Gibraltar, is " founded on conjecture or hearsay information, " and appears only a humble imitation of Dr. " Bancroft in theory, and Dr. Irvine in " practice."

The cases and reports I shall leave to speak for themselves, being confident, that the reader by this time knows how to appreciate Mr. Pym's unqualified assertions: and I believe this gentleman himself will see reason to think, "that the " whole of my publication, as far as it relates to " the fever of Gibraltar, is neither founded on " conjecture or hearsay information;" it is supported by *testimony* and *facts*, which neither sophistry or misrepresentation can over-turn;—evidence, I will venture to say, he very little expected me to be in possession of, or he would have used some consideration before he made so

* The opinions of gentlemen, who have had great opportunities of seeing and treating this disease in Gibraltar, are certainly very different in this respect from Mr. Pym's; Mr. Donnet in his communication, states, " I think there exists " the *greatest* similarity between the symptoms of our " epidemic, and the cases recorded in your publication." Mr. Lamert in his communication, says, "the cases described " in your work, resemble those I have met with in Gibraltar " and the West Indies."

rude and unprovoked an attack on me. The public will now be able to judge, which of us has been deficient in "gaining information, or "remiss in enquiries," as to the disease in question, and whether the above accusation does not recoil with redoubled force, on the head of its author.

I have every proper respect for the characters of Doctors Bancroft and Irvine; but however much I may feel gratified, by finding similar ideas entertained by these gentlemen, and so ably and extensively illustrated by the former, I utterly disclaim the smallest obligation to them.

The greater part of my work was written long before I saw Dr. Bancroft's "Essay on the Yellow "Fever," which came into my hands for the first time in March 1813—My first paper on the subject of this fever was written in October 1811, and inserted by my friend Dr. Harness, in the Edinburgh Journal for October 1812. The history of the fever in the Goliath at Malta in 1799;*—in the Diadem in 1808 in Port Mahon, and also of that in the Achille at Cadiz in 1810, fully prove that I am in no shape indebted to Dr. Irvine's publication,† the existence of which

* See pages 131 and 32.

† Dr. Irvine's work was published in 1810.

I heard of for the first time, when inspecting the naval medical establishments at Malta, in December following. I wish also to refer Mr. Pym to the Edinburgh Medical Journal, vol. VI. page 30, and if he be still sceptical, he may apply to the Director General of the Army Medical Board, who I have no doubt, will soon convince him, that I had no occasion to learn the use of the lancet in the treatment of fever from any person, long before Dr. Irvine published his book.*

* It has been erroneously supposed by some, that the late Dr. Irvine was the first to suggest the abstraction of blood from the temporal artery, in patients labouring under the ardent fever of warm climates.—The following extract from page 2 of the Appendix to Dr. Grant's treatise on the Yellow Fever of Jamaica, which was originally published by that physician, in the Kingston Gazette of the 3d of May, 1794, addressed to the surgeons of ships, will remove all doubt on this head.

" It is unnecessary to enter into a discussion of this fever " at present; suffice it to point out a successful, and, what " is also requisite, a speedy mode of treatment. In the first " instance, when a patient complains of pain in the head " (which is a never-failing concomitant symptom), general " lassitude, and feverish heat; let him be bled immediately " in a recumbent posture, from ten to sixteen ounces, ac- " cording to his strength and constitution; attention being " paid to the habit, whether sanguine or otherwise, and the " urgency of symptoms. In many cases, there is an evident " determination to, and fulness of the blood vessels of the

In the same page he observes, "with both "these gentlemen I so far agree, that neither "the bilious remittent, nor bilious inflammatory, "or sporadic fevers, are contagious—and that "liberal venæsection is beneficial in both." Mr. Pym's suffrage is not worth accepting, for he can have had but little personal experience, having been on the staff of Gibraltar for several years, where there is *no* general hospital, consequently he has not had the immediate care of the sick; and if we may judge, by the frequency of his visits to the hospital of the 7th veterans in October 1810, he could have profited but little by his inspectorial attendance. As this gentleman has lost his notes of the epidemic of 1814, there must be an end of them; but as he does not appear to have met with the same misfortune with those he might have taken in the West Indies, or in 1810 at Gibraltar, he certainly ought to produce them in some shape or other; if he do not, it will very justly be concluded, (as I firmly believe to be the case) that he is princi-

"head: *it is then most advisable to open the temporal* "*artery.*" In the treatment of fever amongst the prisoners of war in England, during the years 1806, 7, 8, 9, and 10, I have *often* had occasion to direct the abstraction of blood, both from the temporal artery and jugular vein.

pally indebted to Mr. Callow's library for the matter in his book.

I shall only notice one paragraph more, and then conclude my reply.—At page 221, he makes the following extract from Dr. Rush's work on the epidemic of Philadelphia, relative to the appearances observed on dissection, by Doctors Physick and Cathrall, in patients who had died of this disease.

"1st. The brain in all its parts, has been "found in a natural condition."

"2nd. The viscera of the thorax are per- "fectly sound."

"3rd. The stomach and duodenum are the "parts most diseased, &c.

And he adds, "the same has been universally "observed in the West Indies and Gibraltar, "every time that disease has prevailed there."

It is evident from this, that Mr. Pym never made a dissection of any who died of the epidemic in Gibraltar—for unquestionably, the brain has *not* been found in a natural condition, as is already shewn by the dissections of Mr. Lamert, Mr. Whitmarsh, Mr. Humphreys, and Mr. Amiel (see pages 305 and 357); and a considerable majority of the medical officers, in their official replies, relative to the epidemic of Gibraltar in 1814, state, that the brain and its membranes were greatly affected. With respect

to the morbid appearances, in those who die of the yellow fever in the West Indies, I refer the reader to an excellent paper from Dr. M'Mullin, inserted in the Edinburgh Medical Journal for 1813.

The appearances observed by that gentleman, correspond exactly with the dissections of those who died in the naval hospital at Port Mahon.

I trust my readers will be convinced, that Mr. Pym's attempt to establish his theory of the epidemic of Gibraltar, *being a disease of foreign origin, sui generis, highly contagious, only attacking the human frame once, and not bearing blood-letting "has completely failed;"* and, what may be termed, *his* experimentum crusis, *the history of the introduction and subsequent propagation of the fever in* 1810, *is fully disproved by incontrovertible evidence.*

APPENDIX No. VIII.

The following Article, which records the almost daily visitations of the Spanish Junta of Health, to the sick of the Temeraire and Invincible in Port Mahon, during the epidemic which prevailed on board these ships in that harbour in 1811, is introduced to shew the declared opinion of these gentlemen, relative to the perfect resemblance this fever bore to the epidemics of Cadiz, Malaga, &c. and which they endeavoured to trace to the circumstance of the Invincible having had communication with the port of Carthagena on the South East coast of Spain. This is the disease, which Mr. Pym says was the bilious and bilious remittent, while the Spanish physicians, &c. who saw the patients nearly every day, unequivocally state, that it was a fever *exactly similar to that of Andalusia, &c.* though they are forced to acknowledge, that it was not quite so contagious! The morbid appearances mentioned by Dr. Vilaseca, will not fail to interest

the reader as a further proof of the identity of the two diseases.

The Invincible did not arrive in Mahon till the 4th of August, and the Temeraire on the 16th following; the former was placed in quarantine for fifteen days, and the latter immediately admitted to pratique. From the official report of the surgeon of the Temeraire, the disease commenced in that ship on the *27th of August, which was two days before the Invincible was released from quarantine,* yet Dr. Vilaseca would wish us to believe that the former received the disease from the latter!

It will be seen on reference to the cases of Mr. Boyd, (which Mr. Pym strangely enough acknowledges to be the "Bulam,") that the disease in the Repulse, appeared a week before the arrival of the Invincible, and it broke out likewise in the Centaur at the same time as in the Repulse.

Noticia y reflexiones acerca la Calentura Amarilla que ha sufrido la tripulacion de varios buques Ingleses en el puerto de Mahon. Por el Dr. D. Antonio Vilaseca y Augé, Medico de numero de los Reales Exércitos de S. M. C. &c.

Hallandome comisionado de primer medico de número del Exército en estas Islas baleares por el Ilustre Sr. Protomedico del Exército de Cataluña Doctor D. Carlos Nogués y Pedrol, con el objeto de cuidar de la colocacion y asistentia oportuna de los Enfermos de medicina que de aquel Exército se remitiesen, el Caballero Intendente que ha sido de la Isla de Menorca Don Pedro Creus, con previo dictamen del Señor Contador de Exército Don Manuel Lopez, y con aprobacion del Excmo, Señor Capitan General del Reyno de Mallorca D. Gregorio de la Cuesta, se sirvió encargarme la visita de los Enfermos de medicina del hospital militar fixo de la Islita de este Puerto: cuya ocupacion me ha facilitado el que sobre un asunto interesante à la salud publica formase la siguiente

HISTORIA.

Una de las salas desocupadas del referido hospital, á instancias de los Sres. Ingleses fué con-

cedida para curar los Enfermos de su nacion, que dieren los Navíos al tiempo de su permanencia en este Puerto; y desde el mes de Julio del corriente año de 1811 los Profesores de los propios Buques tenian en ella algun enfermo ó herido.

El dia primero de Setiembre traxeron á la referida sala un número no acostumbrado de Enfermos del Navío segun se dixo llamado el Invencible. Este Navió vino del Puerto de Cartagena al tiempo en que la fiebre amarilla reynaba en aquella Ciudad: llegó el 14 de Agosto proxîmo pasado: sufrió quinze dias de observacion ó de quarentena, al cabo de los quales declarando baxo palabra de honor, que ningun enfermotenia á bordo, se le dió libre practica, ó comunicacion. Esto fué el dia 28 del mismo Agosto, quatro dias antes que llevasen sus enfermos al hospital de la Islita.

Por la mañana del dia segundo de Setiembre entró otro partida de enfermos del mismo Navío, ascendiendo juntos, segun se me dixo, al número de 50. Por la tarde, fueron todos visitados por los profesores de la Ilustre Junta de Sanidad, otro de los quales tuvo la bondad de comunicarme que dichos enfermos adolecian de un mal muy sospechoso de contagio, pues que en algunos se veia la ictericia en los primeros dias de calentura, con mucha propension al vomito, y con la circunstancia de que alguno habia vomitado materiales negros.

En la mañana del dia quatro, de órden superior entré á ver los enfermos Ingleses junto con dos profesores de la misma nacion, con los profesores de la Junta de Sanidad, y con el Cirujano de la Real Armada Española Don Mateo Perez. Los enfermos Ingleses exîstentes ascendian al número de 116 colocados en dos separaciones, que dividian los enfermos del Navio Invencible, de los del Navîo la Real Temerario que tambien empezaba á darlos en número no acostumbrado: ascendian los de este al número de 40 poco mas ó menos, y los restantes pertenecian al Navío Invencible: en medio de los de la Real habia 2 enteramente amarillos, y 18 entre los del Invincible. Entre la muchedumbre de todos se distinguian á primera vista los que estaban en el principio del mal, mediante la rubicundez del rostro, brillantez de los ojos, y las extremidades extendidas; los demás, ó estaban palidos, ó cubiertos de amarilléz. Pulsé á dos ó tres enfermos de aquellos á quienes aunque calenturientos les faltaba todavia la amarillèz; y ofrecieron á mi tacto un pulso no muy frequente, algo lleno y floxo, y un calor regular, pero que por grados aumentaba aquella impresion que los Autores describen baxo el nombre de calor punzante ó mordáz; tenian la lengua humedecida y algo amarilla. Algun enfermo de los mas adelantados en el mal estaba con un gemido continuo, y habia bastantes, que adolecian de *angina*.

Interrogados distintos enfermos amarillos de si les dolia la cabeza? respondieron que la frente les dolia mucho, y que no podian dormir: si les dolia el cuerpo? contextaron que si, mayormente el espinazo, y los huesos, añadiendo, que no podian menearse en la cama, que tenian mucha propension al vomito, mucha pena en el estomago, y que vomitaban materiales amargos.

Recorridas las dos divisiones de la sala se nos ofreció ver un cadaver envuelto en su mortaja compuesta de mantas ó cobertores de cama; hicimos descoser la mortaja, y vimos teñido el cadaver con una amarilléz subida y universal. Los profesores Ingleses declararon que habia espirado el dia quarto de su enfermedad.

Inmediatamente pasamos á la casa del Señor Contralor en donde reunidos en junta declararon los Doctores Ingleses, que la enfermedad solia atacar á los sugetos por una especie de temblor, sensacion ligera de frio, dolor de cabeza, y propension al vomito; que mediante el uso de los antimoniales y calomelanos, los mas de los enfermos curaban prontamente con sudores copiosos y algunas evacuaciones de primeras vias, pero los que no tenian esta felicidad les duraba muchos dias el mal, poniendose ictericos algunos de ellos, y que un enfermo habia arrojado materiales negros á efecto dela dosis

crecida de calomelanos que se le habia suministrado. Pedido el parecer de los mismos Profesores Ingleses sobre la clasificacion del mal, dixeron que la enfermedad en question era una fiebre biliosa simple, muy vista en Londres, y que la tripulacion del Navio Invencible acostumbraba de algunos años padecerla en la propia estacion en que nos hallamos, desapareciendo la enfermedad luego que el Navio se ponia en alta mar. Nos despedimos.

Al anochecer de este mismo dia quatro, reunidos todos los Profesores á excepcion de los Ingleses en la sala capitular de la casa de la Ciudad, en presencia de la muy ilustre Diputacion de Sanidad, presidida por el Sr. Gobernador interino de la Isla Don Thomas de Zeraim, Mariscal de Campo de los Reales Exércitos de S. M. C. expusimos porturno nuestro parecer sobre lo que habiamos visto en los enfermos Ingleses. El Cirujano de la Real Armada D. Mateo Pérez despues de haber perorado sobre los diversos aspectos con los quales habia visto cundir la fiebre amarilla en varias poblaciones de la Andalucia, no tuvo reparo en declarar abiertamente, que la actual enfermedad de la tripulacion Inglesa era la propia fiebre amarilla. Declaré yo que la mencionada tripulacion de ambos Navios sufria epidemicamente una calentura de caractéres analagos á la que

se llama comunmente fiebre amarilla; solo que no manifestaba aun su qualidad activa de contagio con los asistentes, y demas personas que se rozaban con los enfermos; lo que no obstante miraba oportuno que se tomasen las providencias mas serias, y en los mismos terminos de precaucion como si feuse la calentura amarilla contagiosa. Los demas Profesores corroboraron su primera relacion que dos dias antes habian dado á la Junta de Sanidad, acordando todos en subscribirnos á la proposicion de que la fiebre reynante en los Navios Temerario, é Invencible de S. M. B. era de una naturaleza analoga á la fiebre amarilla contagiosa. Siguiose á esta declaracion el que la Ilustre Junta pasase inmediatmente an ofico atento al Excmo. Señor Almirante Inglés, *Pickmore* paraque se pusiesen ambos Navios en quarentena, y se trasladasen los enfermos ingleses al Real Lazareto.

Dia 5 de Setiembre: por la tarde de ayer se intimó de parte de la Junta de Sanidad la órden de ponerse en quarentena los enfermos, y los asistantes del Hospital militar español, que se hallasen dentro de le Islita, y de evitar todo roze con qualquier sugeto ingles. Pero respecto de ser entonces casi inevitable el roze con varios Ingleses, y no queriendo estos trasladar sus enfermos al Real Lazareto, la superioridad española determinó prudentemente dexar el Hospi-

tal de la Islita para el uso interino de ellos, y que el Hospital español se pasase en otro de los departamentos del Lazareto á sufrir algunos dias de quarentena. El Navio Invencible se puso tambien en quarentena, á lo que se resistió el Navio Temerario.

Notese: que el Navio Temerario llegó á este Puerto el 16 de Agosto último procedente de la Esquadra de delante de Tolon, y dos dias despues del arribo del Invencible; y que se dió inmediatamente libre comunicacion al Temerario por no tener á bordo enfermo alguno.

Dia 7. Se verificó la traslacion del Hospital militar español al Real Lazareto. Los Profesores de la Sanidad visitaron otra vez á los enfermos Ingleses pertenecientes al Navio Temerario, con el objeto de cerciorarse mejor de si estos adolecian de la misma enfermedad que los del Navio Invencible; sobre cuyo punto acordaron por la parte afirmativa.

Por la tarde de este dia el Cirujano Don Julian Aimar fué llamado para visitar un enfermo del barco Transporte Inglés, número 58, y halló al enfermo con las señales de la fiebre amarilla; por cuyo motivo lo delató.

Dia 8. La Junta de Sanidad se sirvió convidarme con sus Profesores á inspeccionar en la Islita un cadaver inglés. Este estaba todo cubierto de una amarillez universal, tenia amora-

tada una porcion de la bolsa de los testiculos, le salia de la boca un poco de espuma blanca: mandamos que le volviesen de espaldas, y en el atco de volverle, cayó de su boca una cantidad notable de un liquido negro como sangre disuelta por putrefaccion; sus aspaldas estaban sembradas de manchas negras, largas, y estrechas. Se dixo que habia espirado á las nueve de la mañana de este dia, y á los diez dias de su enfermedad. No se pudo abrir el cadaver por falta de requisitos, que acostumbran los Ingleses en actos semejantes.

Las circunstancias de este cadaver, y la delacion del enfermo que manifestó el Cirujano Aimar dieron mayor fuerza á mi anterior declaracion, afirmando que la fiebre reynante en los buques Ingleses era la propia calentura amarilla, con la particalaridad de dar nuevos indicios de propagacion, pero que se declaraba todavia menos mortifera y contagiosa que en otras partes.

Dia 10. Se me ha dicho que todos los dias entran en el Hospital bastantes enfermos de uno y otro Navió. Se ha puesto en quarentena al barco Transporte, paro el Navio Temerario conserva su libre comunicacion.

Dia 11. En la tarde de este dia, con los Facultativos de Sanidad vimos otro cadaver inglés, todo amarillo, muy lleno de cardenales, por e

dorso, y soltando un liquido negro por el orificio exterior. Nos dixeron que falleció á la una de la madrugada, y á los trece dias de su enfermedad. Ayer tarde se observó que de bordo del Navio Temerario llevaron á enterrar de un cadaver, que dixeron habia resultado de haberse caido el sugeto desde el alto de un palo.

Dia 12. Vimos por la tarde otro cadaver que presentaba algunas petequias, además de la amarilléz y cardenales comunes: habia soltado por el ano, y se veia en su propia camisa una materia negra y espesa como pez liquida; en los hipocondrios tenia las señales de fuertes vegigatorios, y al parecer de moxas tambien. Dixeron igualmente que habia espirado á los trece dias del mal

Quando ibamos à la Islita vimos tambien el enfermo de Transporte número 58, que convaleciente se paseaba por la cubierta del barco, pero conservaba aun la ictericia.

En los dias 13, 14 y 15, hubo cada dia un muerto amarillo; el último de los quales era otro de los dos enfermos amarillos que el dia quatro vimos pertenecian al Navio Temerario.

Dia 16. Se manifestó otro enfermo de calentura amarilla en el barco transporte 207. Se puso á este en quarentena, mientras que el Navio Temerario mantenia libre su comunicacion. Ayer pasaron de este Navio al Hospital 18 hom-

bres, y hoy 11, quales dixeron que eran los convalecientes reembarcados de órden del Excmo. Senor Almirante Inglés, y que volvian á la Islita porque se empeoraban á bordo del Navio en lugar de restablecerse.

Dia 17. Murió otro enfermo amarilla perteneciente á la tripulacion del Navio Temerario.

Dia 18. Veinte y dos enfermos incluso un oficial del citado Navio han pasado hoy al anochecer al Hospital.

Dia 19. Se levantó la quarentena del Hospital militar español, por no haberse observado en el decurso de doce dias, novedad alguna en sus individuos.

Dia 20. Fuí avisado para ver otro cadaver ingles, y acudir á la Junta de Sanidad, en la qual un profesor inglès recien venido á Malion se opuso al parecer ó dictamen de los profesores de la Sanidad, tocante á la naturaleza de las enfermedades de la Tripulacion de los dos Navíos, pero no pude yo satisfacer en este dia á ninguno de los deseos de la Junta, á causa de mis ocupaciones en el hospital militar de los españoles.

Dia 21. Ayer, y hoy el Navio Temerario ha dado un crecido número de enfermos; y por los partes que la Junta de Sanidad recibe del cabo de sus guardias residente en la misma Isla del hospital, consta que desde el dia 13 hasta el presente ha dado el referido Navío ciento y once

enfermos. Podrá ser muy bien que las noticias recogidas por medio de estos partes sobre el número de los enfermos entrados en el hospital, no correspondan con toda exactitud á la realidad del número, mas sin embargo debe estarse cierto que se fundan aquellas en datos positivos, y que debe ser insignificativa la discrepancia que puede resultar con el número apuntado en las oficinas de los Ingleses. La misma prevencion hago con respecta á los sucesos, pues al paso de ser estos ciertos, solo podrá haber alguna variacion en las fechas.

En quanto á los dias 22, 23, 24 y 25, no tengo en mis apuntaciones cosa particular que se meresca la atencion del publico, pero estoy informado de que en el decurso de ellos tambien han entrado bastantes enfermos del Navìo Temerario mientras que el Invencible apenas dá alguno.

En la tarde del dia 26. vi otro cadaver, todo amarillo, con manchas informes, y negruzcas, y salida de sangre negra por las encias.

Dia 27. Desde el mediodia de anteayer 25 hasta el anochecer de hoy han muerto seis enfermos del Navio Temerario. Este suceso acaeció al tiempo en que el nuevo profesor inglés de quien hago mencion el dia 20 publicó un corto impreso desmentiendo sin pruebas la esencia de la enfermedad contra la opinion de los profesores de Sanidad

Dia 28. Estos profesores revisaron otro vez á los enfermos ingleses, entre los quales vieron á 40 que estaban amarillos. *Hoy se ha puesto en quarentena el Navio Temerario.* Suceso que no debia esperarse ménos del zelo, actividad y maduréz que á un tiempo caracterizan la persona del muy ilustre Señor Don Pedro de Grimarest, Mariscal de Campo de los Reales exércitos de S. M. C., cuyo Señor acababa de llegar y tomar posesion de Governador de esta Isla de Menorca.

Dia 29 y 30. Nueve á diez enfermos han muerto desde el dia 25, y uno de ellos á las dos horas antes de fenecer estuvo incorporado con sosiego en la cama y respondiò á los Facultativos que se hallaba como si nada hubiese tenido.

Cousta que el número de enfermos ingleses entrados en el hospital, durante todo el mes de Setiembre asciende á mas de 300; y que son 22 los enfermos que han muerto dentro del propio mes. No será ménos interesante la noticia de lo que ocurra en lo sucesivo con la Tripulacion de los Navíos Temerario é Invencible de S. M. B. la que recogeré con todo esmêro para la instruccion mia y para otros objetos á que pudiera verme precisado; pero con respecto á las miras politicas y saludables, que me incumben en el dia, me parece suficiente lo expuesto hasta ahora para el objeto de mis.

THE END.